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THE
HISTORICAL
World's Columbian Exposition
AND
CHICAGO • GUIDE.

AUTHENTIC AND RELIABLE INSTRUCTOR FOR VISITORS TO THE
EXPOSITION AND THE MOST PROFITABLE COMPANION FOR
THE SIGHT-SEER WHO HAS TO STAY AT HOME.

TRUSTWORTHY ACCOUNTS OF THE EXHIBITS.

VIEWS AND FULL DESCRIPTIONS OF THE EXPOSITION BUILDINGS.
SPECTACULAR EFFECTS OF STATELY BUILDINGS,

OBJECT LESSONS IN ALL THE WORLD'S INDUSTRIES.

The Palace of Aladdin and Diamonds from Brazil and Africa. The Treasures of Persia, Egypt, and Greece — Antiquity Revived. Spain, Portugal, France, and Great Britain — the Middle Ages. America, Great Britain, France, Germany, and the Latest Inventions of Human Thought.

ILLUSTRATED FROM OFFICIAL DRAWINGS.

BY

HORACE H. MORGAN, LL.D.

AUTHOR OF ENGLISH AND AMERICAN LITERATURE, REPRESENTATIVE NAMES IN ENGLISH LITERATURE, STUDIES OF THE GREAT BRITISH AUTHORS, ETC., ETC.

THE PACIFIC PUBLISHING CO.,
ST. LOUIS, MO. and SAN FRANCISCO, CAL.

1892.



AND BUILDING

THE VINTERS & CO., CHICAGO

COLUMBIAN EXPOSITION, CHICAGO, 1893.

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1892.

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THIS BOOK IS DEDICATED TO
Thomas W. Palmer,
PRESIDENT OF THE WORLD'S COLUMBIAN COMMISSION,
FOR AS HE WAS EARLY AMONG MICHIGAN'S SONS
TO WIN GENERAL RECOGNITION, SO IS HE
FOREMOST IN PROMOTING THE
PROPER CELEBRATION OF
AMERICA'S 400TH ANNIVERSARY.

PREFACE.



THE undertaking of Columbian Expositions by both Italy and the United States is an event of no little historical importance; for though, as at the Philadelphia Centennial, various motives may actuate the visitors in attendance, there must result even to the most superficial observers an impulse which will largely modify the efforts of mankind during the decades next succeeding.

But Italy, which has little claim upon Columbus beyond the accident of having furnished him a birth-place, so little cared for as to be now unknown, and Italy, which however great her influence in European politics, had no share in the pioneer labors which added to the world the American continents: Italy will necessarily dwell mainly upon the memorials which connect Columbus with her history.

America, on the other hand, as the outgrowth of labors which did not foresee her future, will use the past simply as a background for the present, and will emphasize not the medieval conditions under which Columbus was allowed to make his geographical experiment, but rather the new civilization which, rendered possible by the discovery of Columbus, has changed even the conditions of life on the Eastern continent, and which may well accept the city of Chicago as a recent illustration of its aims and methods.

Italy has indeed reason to be proud of her history,

and may well rejoice that although her territory has been but the battlefield for armies not her own, she yet has through the intellect of her children ruled although conquered.

Italy may well boast that despite the spoliation of her treasures she still remains sovereign in the realm of the Fine Arts; that she can never lose interest for the intellect of the civilized world; that her poets are studied far and wide; that her history is an inseparable part of that of the human race; and that her religious domination is unquestioned by the majority of Christians from one end of the world to the other.

But America is the land where the exotics of Europe have been replaced by the natural, wild blossoming of what the new civilization regards as mankind's choicest blessings — personal and political freedom, a civilization which seeks the perennial fragrance of universal participation in God's great gifts to man, rather than the rare outburst of the century plant which, as a symbol of the old world, required the wretchedness of the many to secure its efflorescence.

The goal of human history is the enfranchisement of the human being: emancipation from poverty and squalor, emancipation from ignorance and superstition, emancipation from the sins which clog the spirit and rob one of the full stature of manhood.

America has steadily sought this goal — often blindly, often mistakenly; but her Exposition will show abundantly not alone that she has been chief in the conquest of nature in the industrial world, but that she has equally as good an account to give of her stewardship in matters intellectual and spiritual; that her missionary enterprises, works of philanthropy and charities have

gone hand in hand with her material success; that the churches, and schools, and libraries, and lyceums which dot our land are no fetiches but, like the Cooper Institute, rational attempts to aid some

Forlorn and shipwrecked brother,
Who seeing shall take heart again.

Patient Martha was reproved for too great attention to the non-essentials of life, and too many persons who have no clue to the "one unfailing purpose" find themselves repelled by certain stages of transition. Such will find more abundantly at Chicago, what others found in no small degree at Philadelphia, that great movements must not be judged by the petty standards of the individual, but like the massive sculptures of antiquity require perspective for their proper appreciation. We have the promise from the authorities of the World's Columbian Exposition that the various exhibits shall convey the history of their own evolution, and it is the object of The World's Columbian Exposition and Chicago Guide to prepare visitors for the fullest and most intelligent appreciation of the panorama of the world's past and present.

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 Beautiful Parks,
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 Carefully-tended Cemeteries.
 Luxurious Hotels
 Libraries and Learned Societies.
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CHICAGO ITINERARY.

Chicago is famed as the World's Fair City, and equally so for her lofty, substantial business structures. We have but to glance at the long list of great buildings in the very heart of the city to be convinced of the wisdom displayed by Congress in selecting Chicago as the representative of this country, a typical American city with streets which alone are peculiar to America and Chicago. Before laying out different routes, enabling the visitor to see Chicago to the best advantage and at as little expense as possible, attention will be called to the different features of Chicago that can be reached on foot from the central point of the city, say the City Hall.

The City Hall and Cook County Court House occupies the block bounded on the north by Randolph, on the east by Clark, on the south by Washington and on the west by LaSalle. One block east, on Washington street, is the Adams Express Building. One block west, at the corner of Randolph and Dearborn streets, is the Borden Block. On the south side of Washington, near Clark street, is the Chicago Opera Block, two squares west of the Central Music Hall. South on State street, between Monroe and Adams, is Gunther's Museum. The University Club is on Dearborn street and Calhoun Place, two blocks east of the central branch of the Young Men's Christian Association Building, 148 Madison. Five blocks west, on Canal and Monroe, is the Union Depot, at which the C. & A., C., B. & Q. and P. C. C. & St. L. arrive. On Monroe, between State and Wabash, is the Chicago Club. The Chicago Electric Club is located at 103 Adams, two blocks south of the Young Men's Christian Association. The Board of Trade is located at the foot of LaSalle and Jackson streets. Facing on the west side of LaSalle, one block from the Board of Trade, is the Home Insurance Building, and opposite, on the east side, is the Rialto, Temperance Building, the Rookery Building and the White Chapel Club. One block east is the Custom House and United States Post Office Building. At the south entrance of the Post Office is the Union League Club. Two squares east, on Michigan Boulevard, is the Auditorium.

The Auditorium is 710 feet front, 145 feet high, tower 125 feet high and 75x41 feet interior. In the construction of the Auditorium there was used \$600,000 worth of iron, 800,000 square feet of terra-cotta, 600,000 feet of plate-glass, twenty-five miles of gas and water-pipe, 230 miles of electric wire, 10,000 electric lights, eleven dynamos, thirteen electric motors and 50,000 square feet of marble. It contains in addition to the hotel an opera house and an office building.

In the same block, north, is the Art Institute. One block south is the Chicago Athenæum Library, located at 16-26 Van Buren street. Three blocks north, on the lake front, is the Chicago Exposition Building. Old Fort Dearborn was located at Michigan avenue and Dearborn street. The Chamber of Commerce is on the corner of LaSalle and Washington. The Caxton Library, 328 Dearborn, is three blocks south of the First National Bank, corner of

Dearborn and Monroe. The Tacoma Building is directly opposite the Young Men's Christian Association, at the northeast corner of LaSalle and Madison. The Pullman Building and Richelieu and the Leland Hotels are on Michigan avenue, just north of the Auditorium. Opposite the Post Office, on Dearborn and Adams, is the Owens Building. The Public Library occupies the upper floors of the City Hall, corner of LaSalle and Washington. The Traders' Building is at No. 6 Pacific avenue, not far from the United States Appraiser's offices, corner of Harrison and Sherman streets. The Union Catholic Library is located at 84 Dearborn. Gannis Block, Illinois Bank Building, two blocks east of Western Society of Engineers, 78 LaSalle street. The Gaff Building is situated at No. 230 LaSalle street. The newspapers of Chicago are occupying conspicuous places, as follows: Abend Post, 181 Washington street; Chicago Evening Journal, 161 Dearborn street; Post, 166 Washington street; Globe, 118 Fifth avenue; Herald, LaSalle and Washington streets; Inter-Ocean, Madison and Dearborn streets; Mail, Washington and Fifth avenue; Times, LaSalle and Washington streets; Tribune, Washington and Dearborn streets; Daily News, LaSalle and Washington; Free Press, 94 Fifth avenue; Illinois Staats Zeitung, Washington and Fifth avenue.

Chicago is classified into the divisions—North, East, South and West Chicago. Properly speaking, North Chicago lies north of the Chicago River, all south being South Chicago. At the corner of South Water and Market the river forms two streams, known as the north and south branches, and the territory lying west of these two forks is known as the West Side, and embraces about three-fourths of the entire population of Chicago. On the West Side, the streets leading to the heart of the city, are lined with substantial retail stores, Madison street being the leading business thoroughfare. This street is traversed its entire length by the West Side Cable Street Railway. Two blocks north of Madison street and Ashland boulevard is Union Square, and the Union Park Congregational Church, corner of Ashland and Washington boulevards. The Illinois Club, 154 South Ashland boulevard, is in the immediate neighborhood of the Third Presbyterian Church, corner of Ogden and Ashland boulevard. The Madison street cable leads directly to the West Side Race Track, just west of Garfield Park. Returning to Halstead, one block south is Jacobs Academy and six blocks north, was the scene of the great Haymarket riot. The St. James Reformed Episcopal Church, corner of Cass and Huron, is in the northwestern part of the city.

BOULEVARDS.

No other city has been so wise in counting money wisely expended if devoted to making its appearance more attractive and its conveniences more extensive. Holland, it will be remembered, was wrested from the dominions of the sea; so Chicago has stood for the triumph of mind over matter, and a site lacking in every advantage but in that of location has, by the art of man, been transformed into a famous example of nineteenth century civilization. Flatness has been converted into levelness, and now the city has thirty-five miles of boulevards which will compare favorably with the famous drives of Paris and London.

The Normal Training School, Twelfth and Michigan boulevard.

Libby Prison, State, near Sixteenth street.

Hahnemann's Medical College, Cottage Grove avenue, and Hahnemann Medical College, 2818 Groveland avenue.

Haven School, 1470 Wabash street.

Grace Episcopal Church, South Wabash avenue.

First Regiment Armory, Sixteenth street and Michigan avenue.

Sinai Synagogue, Twenty-first and Indiana avenue.

Chicago Homœopathic Hospital, 352 Southwood street.

Emanuel Baptist Church, Thirty first street and South Park avenue.

First Presbyterian Church, Twenty-first and Indiana avenue.

Newberry Library, Oak and State street.

Around Lincoln Park, on the North Side, are many handsome structures; residences in particular along the lake front, just south of the park.

Potter Palmer's palatial, castle-like residence adds to the beauty of Pine street, in the neighborhood of Lincoln Park.

Alexian Brothers' Hospital, located at 539 and 569 North Clark street.

Cathedral of the Holy Name, Superior and State streets.

The Water Works, North Clark street.

Moody's Church, Chicago and LaSalle avenues.

Cathedral of St. Peter and Paul, Exchange and Ninety-first streets.

Christ's Episcopal Church, Twenty-fourth street and Michigan boulevard.

Calumet Club, Twentieth street and Michigan avenue.

Farragut Rowing Club, Michigan avenue and Thirty-first street.

Plymouth Congregational Church, Twenty-sixth and Michigan avenue.

Hospital for Women and Children, corner Adams and Paulina streets; one block west, The Epiphany.

The Episcopal Cathedral is three blocks west and one block north of the Haymarket Theatre, corner of Peoria street and Washington boulevard.

The Centenary M. E. Church, at corner of Monroe and Morgan streets, is four blocks east of Jefferson Park.

At 813 Harrison is the College of Physicians and Surgeons.

The Westminster Church is at the corner of Peoria and Jackson streets.

The Woman's Medical College is at 335 South Lincoln street.

The depots are all located in the central part of the city, as follows:

The Wabash, the Chicago and Erie, and the Chicago and Grand Trunk and the Atchison, Topeka and Santa Fé are on Polk street and Third avenue.

The Baltimore and Ohio, on Front and Monroe streets.

The Pittsburg, Fort Wayne and Chicago, the Michigan Central, the Chicago, St. Paul and Kansas City and the Chicago and Northern Pacific are on Fifth avenue and Harrison street.

The Chicago and Northwestern, on Wells and King streets.

Chicago, Rock Island and Pacific and the Lake Shore and Michigan Southern, on Van Buren and Sherman streets.

The Cleveland, Columbus, Cincinnati and St. Louis, and the Illinois Central, on the Lake front.

On the South Side live principally the wealth and fashion of the city.

Indiana avenue, Prairie avenue and Michigan boulevard are high-class residence streets, also in the vicinity of Washington Park, and the *Plaisance*.

In Jackson and South Parks are many very costly residences, clubs and family hotels.

The Michael Reese Hospital, Twenty-ninth and Groveland streets.

The Normal Training School, Twelfth and Michigan boulevard.

Libby Prison, State, near Sixteenth street.

Hahnemann's Medical College, Cottage Grove avenue, and Hahnemann Medical College, 2818 Groveland avenue.

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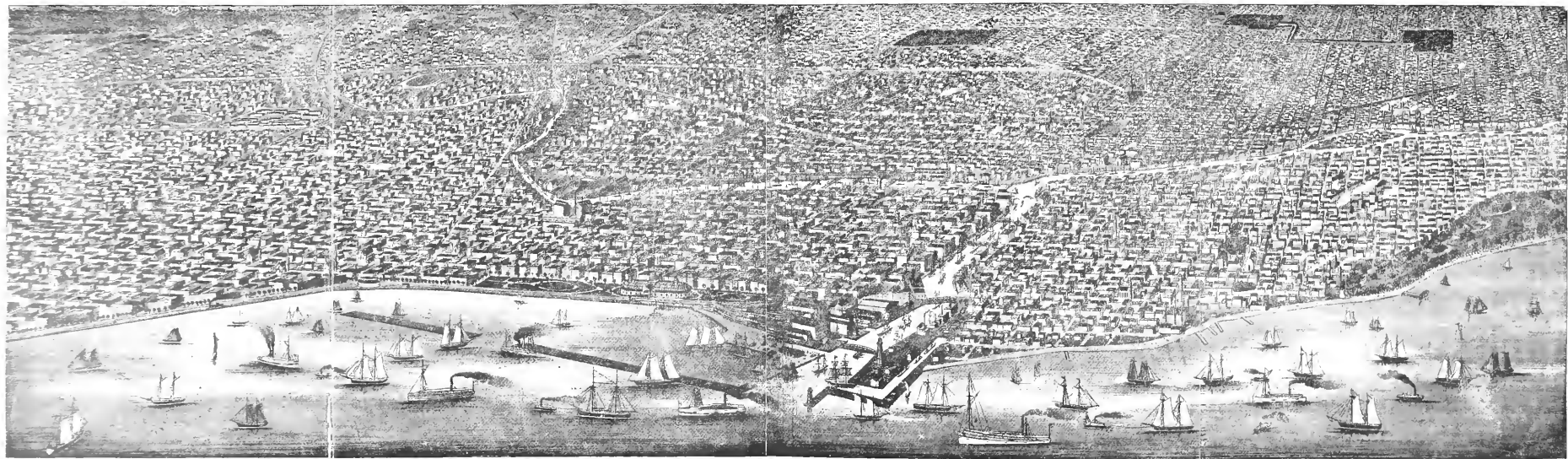
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BIRD'S-EYE VIEW OF CHICAGO.

THE
HISTORICAL
World's Columbian Exposition

— AND —

CHICAGO GUIDE.

INTERNATIONAL EXPOSITIONS.

The International Exhibition originated in France and was suggested by the wretchedness produced among the factory hands of France by the over-production of the manufacturers. The idea at first contemplated nothing beyond such a display of goods as should tempt purchasers, but in 1798 the idea of an Exposition was adopted by the French Government as

calculated to multiply the resources of the French artisan. The success was so great as to justify another exhibit in 1802, followed by others in 1806, 1819, 1823, 1827, and so on until eleven had been held by 1849.

By 1845 Munich imitated the example of Paris, and others had been held irregularly in Belgium, Spain, Portugal, Austria, Denmark, and Russia.

The earliest Exhibition in Great Britain was that at Dublin in 1827 followed by others at Leeds, Manchester, and other towns.

In 1849 the French contemplated giving an international instead of a national character to their Expositions, but the idea was realized first by Great Britain in the London Crystal Palace of 1851. The area covered by the Crystal Palace was 989,884 square feet; the cost of buildings was over three-quarters of a million dollars; and there were used in the structure 3,500 tons of cast iron, 600,000 cubic feet of wood, 550 tons of wrought iron, and 896,000 feet of glass. At this Exposition the United States was represented only by Powers' statuary, Chickering pianos, gas chandeliers, and a few agricultural implements.

In 1853 Dublin again made an exhibit, and the same year witnessed the relative feature remembered as the New York Crystal Palace. It was here that quite a beginning was made for the erection of the monument which now rises to the memory of George Washington. The area covered was 92,496 square feet and there were used 750,000 feet of timber, 300 tons of wrought iron, 1,500 tons of cast iron, and 55,000 square feet of glass.

Industrial success was chiefly marked by this exhibit, the sewing machine making its first appearance.

In 1855, Paris again became the seat of interest. It was here that McCormick won his world-wide reputation, and it has been claimed that the Exhibition showed "how materials derived from forest, field, or mine may be turned to purposes of utility; how the labor of man may be multiplied a thousandfold; how the fruits of the earth may be cultivated and garnered for man's necessities, and how works of art may be made to increase the happiness and enjoyment of mankind."

In 1857 there was held in England an exhibition of Fine Art and Fine Art manufacture and the art exhibit was arranged in accordance with the development theory.

In 1861 Italy undertook a display of its treasures of art and supplemented these by a fair representation of its industries and produce.

In 1802 Great Britain resolved upon the London Exhibition of the Art Works of all Nations; for she fully appreciated her losing position in the race of the nations when on the Continent the teachers were men who united theory and practice. South Kensington was the site selected; the area covered was 988,000 square feet. The United States was not without representation for McCormick, Blake, and Russell were there with their inventions and the sewing machine had not yet become an article of familiar use. The Hoe Printing Presses, Bessamer Steel, the Electric Telegraph and Chemicals attracted deserved attention and added to the interest of the foreigner in America.

In 1807 France again came to the front and the Exposition found use for 171 acres of ground. The area covered by the buildings was about 37 acres. It was here that Miss Harriet Hosmer carried off the chief

honors by her Sleeping Faun, while American photographers took the highest rank. Steinway appeared to compete successfully with Chickering, and the celebrated Mason and Hamlin organs sprang into fame. Idaho, California and the Lake Superior region represented America's mineral wealth, and America was adjudged easily victor in the matter of machinery and machine tools.

Minor exhibitions succeeded in different countries, until in 1873 Austria massed her forces at Vienna. The United States gained great credit for improvements in machinery calculated to give greater precision and to save labor. The arms manufactured at Hartford, the iron work of Pittsburg, the earliest Corliss engine, and reapers and mowers without number crossed the Atlantic to Europe.

In 1876 occurred the Philadelphia Centennial, still a topic for agreeable discussion. But what is not so generally known is that it was carried to a successful realization chiefly through the efforts of what is now termed a Board of Lady Managers but what was then termed the Woman's Centennial Committee of Pennsylvania, of which Mrs. E. D. Gillespie was president. The special service rendered by Mrs. Gillespie and the ladies associated with her was the provision of funds sufficient to admit of carrying to a conclusion the work contemplated. There was for the first time a Woman's Building and the American women subscribed generously.

The Exposition covered with its buildings nearly twenty-two acres of ground. Buildings illustrating the domestic architecture of different countries, and the various State Buildings added to the variety and sug-

gested ideas which will be realized on a grand scale at Chicago in 1893.

The most noticeable result yielded by the Centennial was such an increase of intelligent and fervid patriotism as has substituted a regard for our military veterans, for the unreasoning but bitter hatred of the inveterates.

Next in importance was the impulse which has resulted in what may be termed our Industrial Age and which while laying the foundations of vast private fortunes has for the moment rendered us deaf to obligations other than that of getting on in the world.

The fairly adequate display of our mineral and agricultural resources: the superior excellence of many of our manufactures: the unexpected success of our work in ceramics and glass-ware: the native contributions to the world's pharmacy: our marvelous progress in the manufacture of wool and silk fabrics: work of the jeweler which spread alarm throughout Switzerland: paper making, and printing presses: hardware, tools, railway supplies: machinery which would have caused Tubal-Cain to take pride in his successors: electrical apparatus and great works of the civil engineer: these all united to divert our minds from interests quite as essential, but they may well illustrate the powerful influence given to human effort by these periodical displays.

In 1878 Paris again became the center of the world's interest and in 1889 she outdid herself in her preparations for the most magnificent exhibition heretofore seen.

The following figures will aid in making comparisons between previous expositions and The World's Columbian Exposition at Chicago:

	Acreage.	Square Feet.	Exhibitors.
London, 1851.....	21½	700,000	17,000
Paris, 1855	24½	1,866,000	22,000
London, 1862.....	22½	1,291,800	28,653
Paris, 1867.....	87	3,371,994	52,000
Vienna, 1873.....	280	42,000
Philadelphia, 1876.....	236	1,688,858	30,864
Paris, 1878.....	100	1,858,778	40,366
Paris, 1889.....	173	1,000,000	55,000
Chicago, 1893.....	1037	5,000,000

In the construction of the building for The World's Columbian Exposition there will be required of glass only, 29 acres or 1,254,235 square feet, or 141 car-loads.

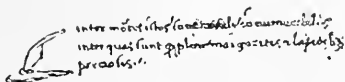
ESTIMATED EXPENDITURES.

For Exposition buildings.....	\$7,295,000
Grading and filling.....	450,400
Viaducts and bridges.....	125,000
Piers.....	70,000
Waterway improvements.....	225,000
Landscape gardening.....	323,490
Railways.....	500,000
Steam plant.....	800,000
Electricity.....	1,500,000
Vases, lamps and posts.....	50,000
Water supply and sewerage.....	600,000
Lake front improvements.....	200,000
Statuary for architectural use.....	100,000
Operating expenses, etc.....	5,560,000
Total.....	\$17,827,590

The city of Chicago furnishes :—

Stock subscriptions.....	\$5,628,000
City bonds.....	5,000,000
Total.....	\$10,628,000

SPECIMEN OF COLUMBUS' MS.



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THE WORLD'S COLUMBIAN EXPOSITION.

The action of Congress which may be taken as the initiation of the Chicago Exposition, has as its preamble the following: An act to provide for celebrating the four hundredth anniversary of the discovery of America by Christopher Columbus, by holding an International Exhibition of Arts, Industries, Manufactures, and Products of the Soil, the Mine and the Sea, in the City of Chicago in the State of Illinois.

The National Commission is composed of eight commissioners at large, and of two commissioners from each State and Territory, as well as from the District of Columbia. These commissioners were to satisfy themselves that a local corporation created for the conduct of the Exposition possessed a *bona fide* capital of

ten millions of dollars. To this commission, authorized to create as an auxiliary a board of lady managers, are deputed all questions concerning the plan and scope of the exhibition, the classification of exhibits, the appointment of judges of award, and in short the conduct of all matters affecting exhibitors.

The dedicatory ceremonies are to be held October 12, 1892 and the Exposition itself to be open from May, 1893, to October, 1893.

All profitable labor is systematic and hence unostentatious. This has led many impatient persons to confound their own ignorance of what was being done with an assured belief that Chicago was not sufficiently alive to the magnitude of the enterprise. So far is this from being true, that since the selection of the site the spade of the laborer, the trowel of the builder, the hammer of the carpenter, and the mental activity of the supervisor have rested neither day nor night. Already these buildings are assured:

	Cost.	Extent.
The Government Building.....	\$400,000	3.6 Acres
Administration Building.....	650,000	1.4 "
Machinery Hall and Annex.....	200,000	26.3 "
Manufactures and Decorative Arts.....	450,000	31.2 "
Horticultural Building.....	250,000	5.7 "
Hall of Mines	350,000	5.6 "
Agricultural Building.....	500,000	9.2 "
Electrical Building.....	650,000	5.6 "
Fisheries Building.....	350,000	6.7 "
Woman's Building	1,000,000	2.3 "
Transportation Building.....	1,000,000	9.3 "
Line Art Museum.....	1,000,000	
Buildings for the several States.....	5,000,000	
Live Stock Buildings	385,000	
Foreign Buildings.....	5,000,000	

Altogether the acreage covered by roof will be at least one hundred and fifty acres — double the ground occupied at the last Paris Exposition.

A Tower of Babel more pretentious than that of Eiffel at Paris; a Water Palace rivaling in effectiveness the architectural monuments of Europe; reproductions of the houses, costumes and occupations of the dwellers in the dead cities of the past as well as of the active living peoples of the world; entertainments for the merely idle and curious as well as for those who seek more than immediate pleasure from their visit; the Edison display of the latest triumphs of this wizard of the storm cloud — these are but a few of the results already assured.

It must be remembered that as islands have risen from the depths of the sea, as the prosperous land of the Hollander was reclaimed from the dominion of old ocean, so Chicago has created all of its possessions. Originally selected for its commercial value, the site of Chicago was unpromising but year by year the indomitable will of its citizens has increasingly caused the desert to blossom like the rose, so that art has provided the beauty denied by nature. By 1893 Chicago intends to add to her other laurels that of the right to contest for the fabled decision of Paris, hoping that to others will fall the lot of the sorrowing CEnone:

Italian Aphrodite beautiful,
Fresh as the foam, new-bathed in Paphian wells,
With rosy slender fingers backward drew
From her warm brows and bosom her deep hair
Ambrosial, golden round her lucid throat
And shoulders: from the violets her light foot
Shone rosy-white, and o'er her rounded form
Between the shadows of the vine-bunches
Floated the glowing sunlight, as she moved.

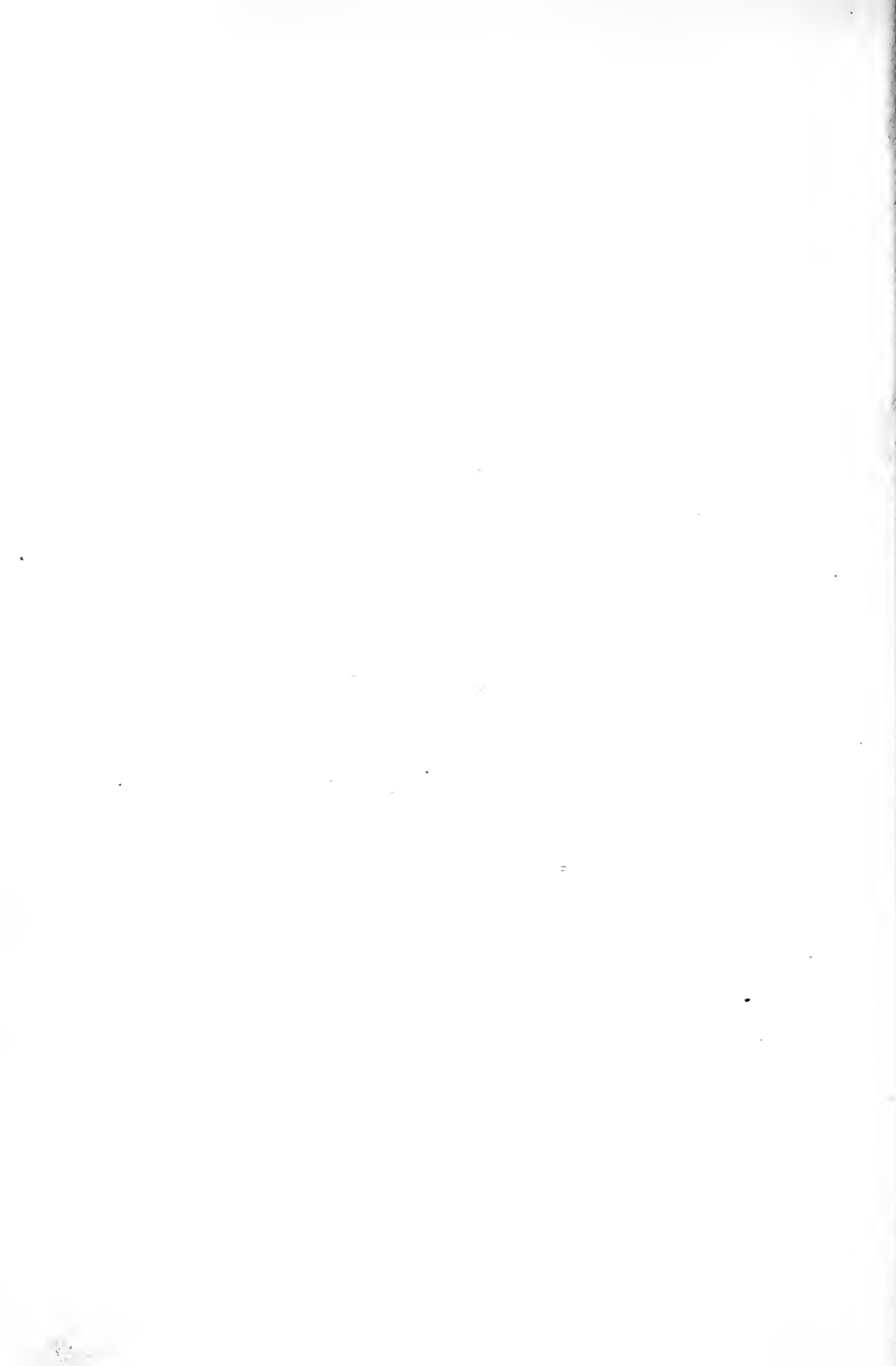
INAUGURAL EXERCISES.

The four days from October 12th to October 16th, have been set aside for the Inaugural Exercises of The World's Columbian Exposition, and \$150,000 has been appropriated for their proper conduct. There will be a military encampment, military parades and reviews, and such pyrotechnic displays as have not hitherto been possible. Niagara Falls, Perry's Victory on Lake Erie, and the National Colors are some of the set pieces which the skill of the pyrotechnist will present.

The first day, or Memorial Day, will be ushered in by a grand national salute, for noise is essential to American popular enjoyment. At ten o'clock the President of the United States will be received, after which will follow the reception of the thirteen States, these being represented by their Governors together with their escorts. Next in order will be the rendition of the hymn, America, followed by that of the Star-Spangled Banner. The Commemoration Ode will follow, after which the Director-General will deliver his address. Next in order will be the formal presentation of the buildings, succeeded by the rendition of a cantata, and by the Presentation of the Buildings to the President of the United States. The President of the United States will then make an appropriate address, after which will be given the Dedicatory Oration. The Hallelujah chorus followed by a National Salute will close the day's exercises.



ADMINISTRATION BUILDING.



Thursday will be taken up by a reception given by the President of the United States.

Friday will witness the Grand Civic and Industrial Procession, which will be a Pageant illustrative of Columbus' services and of the cardinal events in the History of the United States. The evening will be devoted to the Dedication Ball.

The scenic effects provided are, so far as already determined upon,

A HISTORICAL MARINE PAGEANT

floats representing chronologically the great events of history from 1492 to 1892 moving in procession among the lagoons of Jackson Park while the skill of the electrician will be invoked to imitate "fairy moonlight."

THE NATIONAL PASSION FOR GOLDEN-MOUTHED ORATORY

will be fully gratified by the distinguished speakers who will at once honor and derive honor from the memorable occasion.

ST. CECILIA

will be fitly honored by the wonderful choral exercises which will supplement the martial strains of the military bands which attend the procession.

Many have forgotten, some never knew, the pro-

gramme of exercises with which our Philadelphia Centennial opened, so that it seems worth while to reproduce it.

The procession included such dignitaries as Dom Pedro, the Emperor of Brazil, embassies from Germany, Great Britain, Sweden, Japan, Austria, and France; the President of the United States, the Governors of various States, and a grand military escort. A carefully selected orchestra rendered the Inauguration March after which Bishop Simpson of the Methodist Episcopal Church followed our national custom of invoking the blessing of God upon the undertaking. Next a grand chorus rendered Whittier's hymn, beginning Our father's God from out whose hand.

The Exposition Buildings were then formally turned over to the Commission after which Maryland was honored by the rendition of a cantata by the lamented Sidney Lanier. Finally the procession after the singing of the Hallelujah Chorus defiles through the maze of buildings and as it passes out into the grounds, the Exposition is considered open to visitors.

These exercises may seem somewhat lifeless to the reader, but when he remembers that they had for their setting vast crowds in a holiday humor, the various coloring of varied dress and architecture not far inferior to the plumage of the birds in a South American forest, the almost insect-like activity of countless throngs of sight-seers, the roll of drums, the blare of trumpets, the solemnity attending the conduct of formal exercises by great official dignitaries, and the volumes of soul-stirring choral music, the scene will be vitalized.

THE PROCESSION OF THE NATIONS.

That we may realize the extent to which Americans will be enabled to enjoy the pleasures and treasures of the old world, it should be borne in mind that official acceptance of the privilege of participating in the World's Columbian Exposition has been received from the leading countries of the civilized world.

France, still the leader in the arts of design and fresh from the triumphs of 1888, will introduce us to a veritable Paris in America.

Great Britain, the insular sovereign, will enable us to judge for ourselves of the degree and extent of her superiority.

Germany, not content with the reputation gained by her scholars, will bring before us her achievements under the chancellorship of the great Bismarek.

Spain was the first to discover America and connected with American history not solely by discovery and by the occupation of Florida, Mexico, Central America, and South America, but likewise by the leadership among nations which she then enjoyed in virtue of the wise administration of that woman without a peer — Queen Isabella. Spain will be represented at Chicago alike by memorials of the great Columbus, and by an adequate display of her later progress and prosperity.

Japan — the Cipango of Marco Polo — will seek to enlarge her claim upon American sympathies and to still further acquaint us with her rare mastery of skillful work.

China, the land of fable, the sole representative of a

civilization wholly unlike our own, will educate us so that we shall no longer confound a Chinese mandarin with the Heathen Chinese whom Bret Harte has made so familiar to us.

Mexico, the land of Cortes, the home of Montezuma, the scene of such frequent turbulence while passing from the Spanish domination to the republic of the present will by its exhibits connect the past with the present.

Honduras, Salvador, Costa Rica, Guatemala, and Nicaragua will transport us to the mysteries of the age of the builders of Palenque and to the scene rendered memorable by the romantic experiences of the early Spanish adventurers.

Peru and Chili will revive our recollections of the lost Inca civilization while they bring into sharp contrast with it the civilization of the nineteenth century.

Russia, always in sympathy with America although seeking an opposite solution of the political problem will bring Moscow and St. Petersburg to our very doors.

Turkey, a dominion whose wealth, extent and general wretchedness most strikingly illustrates the evils of the old civilization, will make common property its skill in domestic manufactures.

Egypt, the land of the Ptolomies, the fountain of ancient learning, the home of the sphinx and pyramids, the realm of the renowned Cleopatra, and the pleasure-ground of the Oriental traveler, will carry us back to hoary antiquity.

Algiers, long the land of the corsair, will exhibit the changes wrought by the modern idea.

Brazil, the sole American colony of the maritime Portuguese and so recently the dominion of Dom Pedro, will bring before our astonished eyes its wonders of nature and its triumphs of civilization.

The Argentine Republic whose extent, wealth, and general prosperity are unsuspected by us in spite of our near vicinity, will turn our eyes southward.

Cuba, whence sailed the ships of Cortes, Pizarro, and Ponce de Leon, and where in the famous city of Havana now rests the coffin of Christopher Columbus; San Domingo the original burying place of America's discoverer and a French colony wrested from the Spaniard; and all the group of islands which seemed to the excited imagination of Columbus the veritable Cathay, will contribute the story in the world's history.

Australia, the New England of the Pacific, and India, the land of nature's most unstinted bounties, will likewise have their place in this grand pageant of the nations.

Switzerland, the land of William Tell, has apart from its history and its scenery much to show in the way of watches and jewelry, and musical boxes.

The Netherlands, won from the ocean and throughout their history illustrating the truth that peace hath her victories as well as war, has surprises in store in the matter of linen paper, woolens, silk velvets, and pipes for the jolly smoker.

Belgium has its Flanders linens, its Brabant lace, its Tournay carpets and porcelain, its Vervier's cloth, its Brussels carriages, its Namur cutlery, and the products of the foundries and machine shops at Liege.

Turkey has its handwrought carpets and rugs, its embroideries, and the products of its tanneries, besides

the many curious evolutions of customs, architecture, and costume.

China, ever old and ever new; China, visited by Marco Polo, and the scene of many an exploit by Spanish, Portuguese and Dutch sailors; China, which to-day stands in marked contrast to the civilization of the west, accepting but so much thereof as she thinks wise to graft upon her time-honored institutions; China can but delight the eyes and fascinate the imagination of the most careless visitor to the Exposition. In the arts which are necessary to comfort and which minister to luxury China has much to teach us. Her mines are known to furnish every metal except platinum; her silks are coveted by all women; her porcelain is yet unrivaled by the skillful artists of Europe; her fans, card-cases, seals, snuff-boxes, combs, chessmen and tortoise-shell ornaments form a much more attractive article of commerce than her teas, which now keep fragrant her memory among all civilized peoples.

Japan, reaching back far into the past, has become quite an important factor in modern life. We are familiar with the japanned ware and the various ingenious curiosities which find their way into the homes of all but the very poor. But we may not know that Japan holds high rank for her work in iron and copper and steel; that she is a successful manufacturer of thermometers, watches, clocks, and even of telescopes; that her swords and daggers rival the steel of Damascus.

Among the Exhibits of Japan which are likely to interest the sight-seer and the reflecting student, will be two buildings representing very early forms of Japanese architecture, the Monastery of Kiota built in 1397, and the Hoodo which dates back to 1052.

Persia still possesses its wonderful collection of crown jewels, and its industries in the direction of deftly woven rugs and carpets suggest modern interests apart from the charm which its history has alike for the student and for the lover of romance.

India the inexhaustible source of history which reads like legend; the land whose spoils have enriched so many conquerors without impoverishing its own native princes; whose religion is professed by countless millions while it has given to the civilized world the rare poems of Sir Edwin Arnold and the theology of the theosophists; whose forests still the abode of fierce wild beasts have come to be the hunting grounds of the most adventurous, whose instinct of devotion is such as to have drawn thither the missionaries of all peoples: India great and mysterious in its antiquity and potent and eminent in modern life has resources in itself adequate to an Exposition.

Egypt the land of the Ptolomies the fountain of ancient learning, the home of the sphinx and of pyramids, the realm of the world-renowned Cleopatra, and the pleasure-ground of the Oriental traveler, the scene of such striking events in the world's history will bring to our minds the forgotten glories of the past while it makes display of the resources of the present. The fertility of the soil and the diversity of population prevent her competition in the direction of labor-saving machinery, for instead of the steam plough, the plough of the ancient monuments still continues in use. Her industries are confined to Tanning, Pottery, Cotton, Silk, Wool, Sugar, Indigo, Cordage, and Gunpowder, but her architecture, and costumes, can be represented

while photographic art can put before us her monuments and her scenery.

Spain apart from her memorials of discovery and conquest in the New World ; in addition to her illustrations of her domination by Roman, Carthaginian, and Moor ; has still her mines of lead, of quicksilver, of copper, of zinc, of coal, of calamine, of cobalt, of bismuth, of antimony, of tin, of graphite, of alum, of sulphur, of saltpetre and of mercury. Her quarries still yield marble, and alabaster, and jasper. Her treasures of rubies, and topazes, and amethysts, and garnets are still unexhausted. And in Art Spain has not simply paintings by great masters of the past but her modern school of artists holds high rank in the judgment of the fanciers of art.

Germany can appeal not solely to the love of fatherland nor only to her supremacy in matters scholarly, but apart from the treasures accumulated during her long historical career she can show us much in the matter of modern industries. Her mines still produce gold, silver, copper, tin, iron, rock salt, alum, lead, litharge, cobalt, antimony, bismuth, arsenic, mercury and sulphur. Her springs still bubble over with health-giving waters whose virtues are known even in our own country. The effervescence of her vine-clad hills is abundantly shipped to this country as an article of commerce. Her manufactures of linen and woolen, of cotton and silk and of leather, are such as to compete with countries better known to us ; her working in metals is not confined to the death-dealing cannon of the famous Krupp ; her work in the direction of musical instruments and children's toys is known everywhere.

Great Britain will be fully represented at Chicago

and so genuine is her interest that already are begun complete collections representing her minerals and her possessions of interest to the man of science.

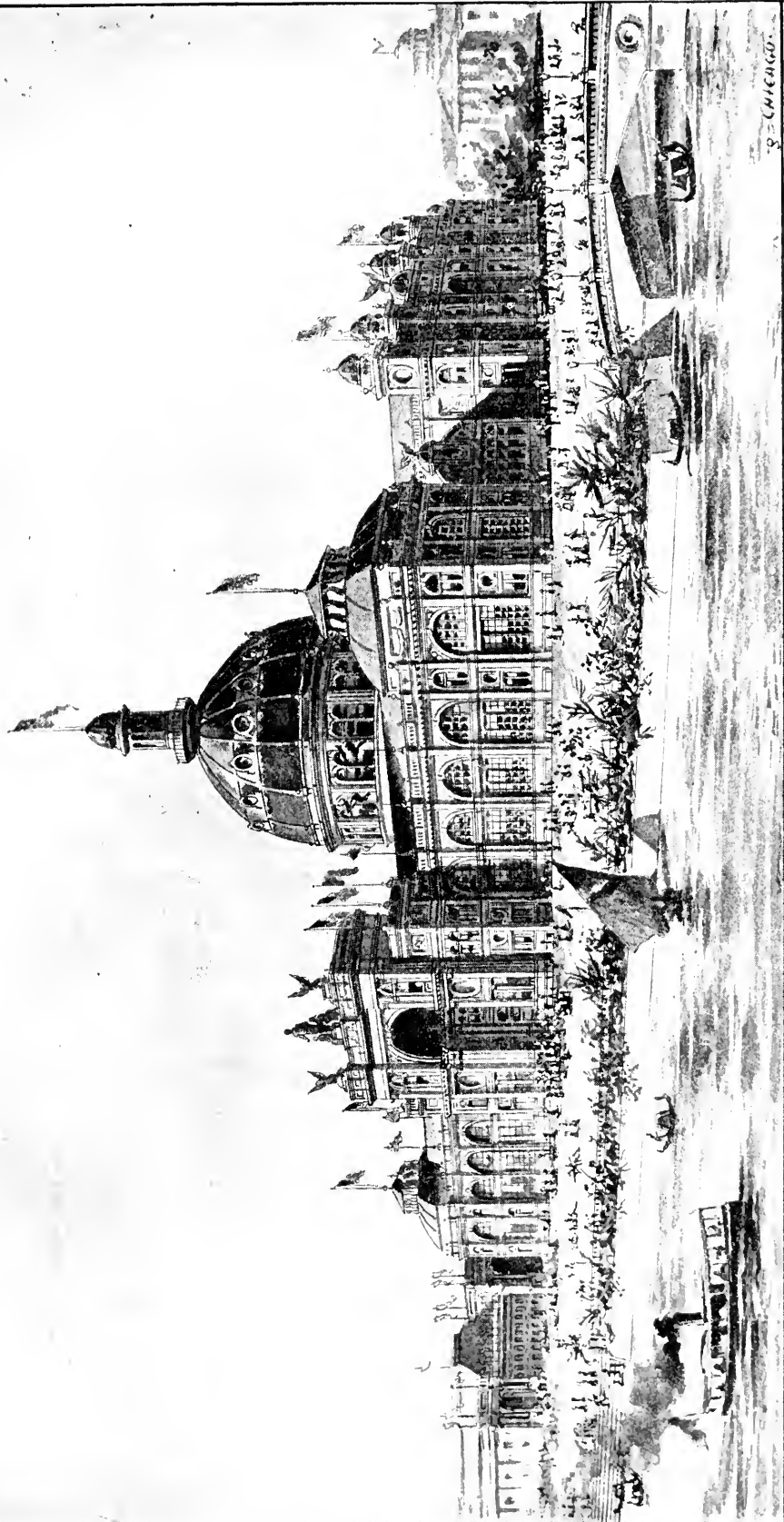
But her fisheries and her manufactures of cotton and woolen, and linen, and silk and iron form her great interests outside of the Department of the Liberal Arts in which upon questions political, social, literary and scientific her voice will be distinctly heard.

France, the earliest to see the value of Expositions and the latest in the field has given assurance that although like Laboulaye unable to transport Paris to America she will exhibit her wonders of skillful contrivance. No longer need we depend upon the accident of a fashionable wedding for which the bride has ordered her trousseau of Worth; for we may see for ourselves the rarest fabrics of silk, and broadcloth, and muslin, and lace. We may at least feast our eyes upon visions of dainty gloves and delicate hosiery. We may revel in objects de vertu et bijouterie, until we realize that it is indeed an art to please and when we add her priceless possessions in the arts of the painter, the sculptor, the engraver, and the composer, we may sigh not for more worlds to conquer, but for longer life in which to appreciate the royal resources at our command.

THE ADMINISTRATION BUILDING.

By popular verdict the Administration Building is pronounced the gem and crown of the Exposition Buildings. It is located at the west end of the great court in the southern part of the site, looking eastward, and at its rear are the transportation facilities and depot. The object most conspicuous which will attract the gaze of visitors on reaching the grounds is the Gilded Dome of this great building. This great edifice cost about \$550,000. The architect is Richard M. Hunt, of New York, President of the American Institute of Architects, to whose established reputation it is a notable contribution. It covers an area of 250 feet square and consists of four pavilions 84 feet square, one at each of the four angles of the square and connected by a great central dome 120 feet in diameter and 220 feet in height, leaving at the center of each façade a recess 82 feet wide, within which are the grand entrances to the building. The general design is in the style of the French renaissance. The first great story is in the Doric order, of heroic proportions, surrounded by lofty balustrade and having the great tiers of the angle of each pavilion crowned with sculpture. The second story, with its lofty and spacious colonnade, is of the Ionic order.

Externally the design may be divided in its height into three principal stages. The first stage consists of the four pavilions, corresponding in height with the various buildings grouped about it, which are about 65



ART BUILDING.



feet high. The second stage, which is of the same height, is a continuation of the central rotunda, 175 feet square, surrounded on all sides by an open colonnade of noble proportions, 20 feet wide and 40 feet high, with columns 4 feet in diameter. This colonnade is reached by staircases and elevators from the four principal halls and is interrupted at the angles by corner pavilions, crowned with domes and groups of statuary. The third stage consists of the base of the great dome, 30 feet in height, and octagonal in form, and the dome itself. This great dome is gilded, and forms a fitting crown to the first and second stages of the magnificent edifice.

The four great entrances, one on each side of the building, are 50 feet wide and 50 feet high, deeply recessed and covered by semi-circular arched vaults, richly coffered. In the rear of these arches are the entrance doors, and above them great screens of glass, giving light to the central rotunda. Across the face of these screens, at the level of the office floor, are galleries of communication between the different pavilions.

The interior features of this great building even exceed in beauty and splendor those of the exterior. Between every two of the grand entrances, and connecting the intervening pavilion with the great rotunda, is a hall or loggia, 30 feet square, giving access to the offices and provided with broad, circular stairways and swift running elevators. Internally, the rotunda is octagonal in form, the first story being composed of eight enormous arched openings, corresponding in size to the arches of the great entrances. Above these arches is a freize, 27 feet in width, the panels of which

are filled with tablets, borne by figures carved in low relief and covered with commemorative inscriptions.

Above the balcony is a second story, 50 feet in height. From the top of the cornice of this story rises the interior dome, 200 feet from the floor, and in the center is an opening 50 feet in diameter, transmitting a flow of light from the exterior dome overhead. The under side of the dome is enriched with deep panelings richly moulded, and the panels are filled with sculpture, in low relief, and immense paintings, representing the arts and sciences. In size this rotunda rivals, if it does not surpass, the most celebrated domes of a similar character in the world.

Each of the corner pavilions, which are four stories in height, is divided into large and small offices for the various Departments of the Administration, and lobbies and toilet rooms. The ground floor contains in one pavilion, the Fire and Police Departments, with cells for the detention of prisoners; in a second pavilion are the offices of the Ambulance Service, the Physician and Pharmacy, the Foreign Department and the Information Bureau; in the third pavilion the Post-Office and a Bank, and in the fourth the offices of Public Comfort and a restaurant. The second, third and fourth stories contain the Board rooms, the Committee rooms, the rooms of the Director-General, the Department of Publicity and Promotion, and of the United States Columbian Commission.

THE NATIONAL COMMISSION.

President.....	Thomas W. Palmer.....	Michigan.
1st Vice-Pres't.....	Thomas M. Waller.....	Connecticut.
2d Vice-Pres't	M. H. DeYoung.....	California.
3d Vice-Pres't	Davidson B. Penn.....	Louisiana.
4th Vice-Pres't.....	Gorton W. Allen.....	New York.
5th Vice-Pres't	Alexander B. Andrews.....	North Carolina.
Secretary	John T. Dickinson.....	Texas.

THE AGRICULTURAL BUILDING.

McKim, Meade and White, of New York, are the architects who designed the Agricultural Building, — one of the most magnificent of the Exposition Buildings. The style is Classic Renaissance. The building stands near the lake shore and is almost surrounded by the lagoons which lead from the Park to the Lake. It is 800 feet from east to west, and 500 feet from north to south. The north line fronts upon the Pier and Casino: the east front faces a harbor alive with the craft of the pleasure-seekers: the west looks upon a continuation of the northern lagoon.

On either side of the main entrance are mammoth Corinthian pillars, fifty feet in height and five feet in diameter. On each corner as well as at the center rise pavilions, the central one being one hundred and forty-five feet square. Curtains connect the corner pavilions with the main building, so that there is formed a continuous arcade around the building.

The main entrance, sixty-four feet in width, leads into a vestibule whence one passes into a rotunda whose diameter is one hundred feet, and which is surmounted by a mammoth glass dome, one hundred and thirty feet in height. The vestibule is adorned with statuary designed to illustrate agricultural industry, and the main entrances likewise are furnished elaborately with similar groups. The corner pavilions are crowned by domes ninety-six feet high, above which tower groups of statuary, the design being that of three female figures, herculean in proportions, which support an immense globe.

The Agricultural Building covers more than nine acres, while the Dairy and Forestry Buildings add 6.2

acres and the total cost has been a million of dollars.

South of the Agricultural Building there is yet an annex devoted to the uses of an Agricultural Assembly Hall and to the exhibition of Live Stock. On the first floor, near the main entrance, is located a Bureau of Information which will furnish visitors with all required information in regard to the Agricultural Exhibits, or indeed in regard to the other features of the Exposition.

There are likewise on the same floor, convenient committee rooms for the various Live Stock associations, and handsomely equipped waiting rooms for ladies, lounging rooms for gentlemen, and ample toilet facilities; the vicinity of a station of the elevated railway still further increases the facilities at the disposition of the visitor.

Broad stairways lead from the first floor to the assembly room which has a seating capacity of 1500, and furnishes facilities for lectures by specialists which will rationalize, illuminate, and render profitable the agricultural exhibits. When we call to mind the fact that the improvements in agricultural science alone rendered possible the support of the Union Army in the field during the Civil War, it will at once become evident that a calling which in its present stage is so wholly dependent upon the work of the biologist, the chemist, and the machinist has special need of presenting its exhibits in the order of evolution and in supplementing its material wealth by papers from theoretical farmers.

CASINO AND PIER.

The Pier is eighty feet wide and extends one thousand feet out into Lake Michigan from the eastern extremity of the Grand Court, or avenue running from the Administration Building to the Lake. The shore on either side of the Pier furnishes broad and beautiful promenades which naturally will be thronged by thousands while resting from their sight-seeing in the Exposition Buildings.

The Casino will stand at the extremity of the Pier thus furnishing the advantages of an insular position in Lake Michigan while at the same time insuring the proper perspective for the Exposition Buildings which the magic wand of industry will evoke along the shore.

The Casino itself is a composite structure planned by Burling and Whitehouse, architects of Chicago, and embraces nine pavilions. It is a reproduction on a small scale of the far-famed city of gondolas, Venice, and the Venetian style of its architecture still further encourages the illusion. Its dimensions will be 180 by 400 feet, and it will rest upon piles. The central pavilion will rise to the height of 180 feet, while the others will be two stories in height, rising eighty feet above the waters of the Lake. Communication between the pavilions will be both by gondolas and by bridges, so that the visitor may at his pleasure give himself up to the romances of history, or exhibit the more prosaic spirit of modern rapid transit.

Around the central pavilion runs a gallery fifty-six feet in width: at the west end of the Pier stand St.

Gandens' Thirteen Original States— works in sculpture designed for the World's Columbian Exposition.

In front of the Casino is a harbor for pleasure craft which by night is illuminated by incandescent lamps sunk beneath the water.

Here in the Casino the visitor may sit at his ease, fanned by the fresh Lake breezes, soothed by strains of excellent music, provided at pleasure with the choicest viands and refreshments, and having his comfort enhanced by the multitudinous dancing craft, the mighty steamers furrowing the waters of Lake Michigan, the magnificent spectacle afforded by the Exposition Buildings, or by the restless passing to and fro of the countless thousands upon the shore and upon the Pier.

Those especially whom necessity or preference compels to visit the World's Columbian Exposition when fans have replaced wraps and the meditative charms of a grate fire have been succeeded by ardent yearnings for an arctic temperature, will enjoy the luxurious retreat furnished by the Casino and Pier. Those, too, whose age inclines them to romance and to what the song-writer describes as "fairly moonlight" will enjoy the very superlative of such enjoyments; for with the added chorus of good music whose distance is regulated by the changing pleasure of the hearer, there will be left no occasion for coveting the Elysium of Mohammed. So, too, the epicure and the gourmet will be able to feast all of his senses at once and to imagine himself imitating the most riotous of Roman Emperors, or the most capricious diner-out. The lover of scenery will have on the one hand the Venetian-like scene of gliding gondolas and other pleasure craft and the more impressive but none the less lively outlook upon Lake Michigan where the great ships and steamers furrow their pathway. On the other hand

will be the buildings of the World's Columbian Exposition representing the skill of man and charming by their magnificence and variety.

THE ELECTRICAL BUILDING.

The Electrical Building is 351 feet wide and 767 feet long, the major axis running north and south. The south front is on the great Quadrangle or Court; the north front faces the Lagoon; the east front is opposite the Manufactures Building, and the west faces the Mines Building.

The general scheme of the plan is based upon a longitudinal nave 115 feet wide and 114 feet high, crossed in the middle by a transept of the same width and height. The nave and the transept have a pitched roof with a range of skylights at the bottom of the pitch and clearstory windows. The rest of the building is covered with a flat roof, averaging 62 feet in height and provided with skylights.

The second story is composed of a series of galleries connected across the nave by two bridges, with access by four grand staircases. The area of the galleries in the second story is 118,446 square feet, or 2.7 acres.

The exterior walls of this building are composed of a continuous Corinthian order of pilasters 3 feet 6 inches wide and 42 feet high, supporting a full entablature, and resting upon a stylobate 8 feet 6 inches. The total height of the walls from the grade outside is 68 feet 6 inches.

The north pavilion is placed between the two great apsidal or semi-circular projections of the building ; it is flanked by two towers 195 feet high. The central feature is a great semi-circular window, above which, 102 feet from the ground, is a colonnade forming an open loggia or gallery, commanding a view over the Lagoon and all the north portion of the grounds.

The east and west central pavilions are composed of two towers, 168 feet high. In front of these two pavilions there is a great portico composed of the Corinthian order with full columns.

The south pavilion is a hemicycle or niche, 78 feet in diameter and 103 feet high. The opening of this niche is framed by a semi-circular arch, which is crowned by a gable or pediment with smaller gables on the returns, and surmounted by an attic, the whole reaching the height of 142 feet. In the center of this niche, upon a lofty pedestal, is a colossal statue of Franklin, whose illustrious name intimately connects the early history of the Republic with one of the most important discoveries in the phenomena of electricity.

At each of the four corners of the building there is a pavilion, above which rises a light open spire or tower, 169 feet high. Intermediate between these corner pavilions and the central pavilions on the east and west sides, there is a subordinate pavilion bearing a low, square dome upon an open lantern. There are thus ten spires and four domes. The entablature of the great Corinthian order breaks around each of the pilasters of the four fronts, and above each pilaster in the Attic order is a pedestal bearing a lofty mast for the display of banners by day and electric lights by night. Of these masts there are in all fifty-four.

The first story of the building is indicated in these façades between the great pilasters of the Corinthian order, by a subordinate Ionic order, with full-columns and pilasters, forming an open screen in front of the windows.

The Electricity Building has an open portico extending along the whole of the south façade, the lower or Ionic order forming an open screen in front of it. The various subordinate pavilions are treated with windows and balconies. The details of the exterior orders are richly decorated, and the pediments, friezes, panels and spandrels have received a decoration of figures in relief, with architectural motifs, the general tendency of which is to illustrate the purposes of the building.

The color of the exterior is like marble, but the walls of the hemicycle and of the various porticos and loggia are highly enriched with color, the pilasters in these places being decorated with scagliola and the capitals with metallic effects in bronze.

In the design of this building it was proposed by the architects to so devise its details and general outlines that they might be capable of providing an electric illumination by night on a scale hitherto unknown, the flag-staffs, the open porticos, and the towers, especially, being arranged with this in view. Van Brunt and Howe, of Kansas City, are the architects.

It was proposed that the hemicycle or niche which forms the south porch should have either a great chandelier or crown of lights suspended from the center of the half dome, or should be provided with electric lights masked behind the triumphal arch which forms the opening of the niche.

THE FISHERIES BUILDING.

Pictured on the opposite page is the Fisheries Building, including the two smaller polygonal buildings connected with the main building on either end by arcades. The extreme length of the building is 1,100 feet, and the width 200 feet. It is built on a banana-shaped island and sub-divided into three parts to conform to the shape of the site.

In the central portion is the general Fisheries Exhibit. In one of the polygonal buildings is the Angling Exhibit, and in the other the Aquaria. The exterior of the building is Spanish-Romanesque, which contrasts agreeably in appearance with the other buildings.

The Fish Exhibit is a wonderful one, and not the least interesting portion of it is the Aquarial or Live Fish display. This is contained in a circular building, 135 feet in diameter, standing near one extremity of the main Fisheries Building and in a great curved corridor connecting the two.

In the center of the circular building is a rotunda 60 feet in diameter, in the middle of which is a basin or pool 26 feet wide, from which rises a towering mass of rocks covered with moss and lichens. From clefts and crevices in the rocks crystal streams of water gush and drop to the masses of reeds, rushes, and ornamental semi-aquatic plants in the basin below. In this pool gorgeous gold fishes, golden ides, golden tench, and other fishes disport. From the rotunda one side of the larger series of aquaria may be viewed. These are ten in number and have a capacity of 7,000 to 27,000 gallons of water each.



Passing out of the rotunda by the entrances, a great corridor or arcade is reached, where on one hand can be viewed the opposite side of the series of great tanks and on the other a line of tanks somewhat smaller, ranging from 750 to 1,500 gallons each in capacity. The corridor or arcade is about 15 feet wide. The glass fronts of the Aquaria are in length about 575 feet and have 3,000 square feet of surface. They make a panorama never before seen in any exhibition, and rival the great permanent aquariums of the world not only in size but in all other respects.

The total water capacity of the Aquaria, exclusive of reservoirs, is 18,725 cubic feet, or 140,000 gallons. This weighs 1,192,425 pounds, or almost 600 tons. Of this amount about 40,000 gallons is devoted to the Marine Exhibit. In the entire salt water circulation, including reservoirs, there are about 80,000 gallons. The pumping and distributing plant for the Marine Aquaria is constructed of volcanite. The pumps are in duplicate and each has a capacity of 3,000 gallons per hour. The supply of sea water was secured by evaporating the necessary quantity at the Woods Holl station of the United States Fish Commission to about one-fifth its bulk, thus reducing both quantity and weight for transportation about 80 per cent. The fresh water required to restore it to its proper density was supplied from Lake Michigan.

In transporting the marine fishes to Chicago from the coast there was an addition of probably 3,000 gallons of pure sea water to supply on each trip. Every visitor will take a deep interest in the Fisheries Exhibit.

The aquarium wherever forming part of an exposition has been an object of popular interest even if it

be more difficult to calculate its value to those who desire to promote pisciculture. At Chicago there will be one aquarium twenty-six feet in diameter, and ten smaller auxiliaries. Here will be gathered, so far as possible, representatives of all the finny tribe, and the angler, the student of zoology, and the curious child may expect to find in this single exhibit ample repayment for their visit to the City by the Lake.

The sportsman and the epicure will look, will delight upon the Muskalonge, the Lake Trout, the Salmon, the Brook Trout, the Spanish Mackerel, the White Fish, Bass of various species, the Weak Fish, the Sheepshead, the Blue Fish.

The imaginative reader will have recalled to his mind many a thrilling incident, for he will see before him the fierce Shark, the Octopus, the Ray, the Sword Fish, Electric Eel, and other monarchs of the finny tribe.

The curious will give their attention to the curious fish such as the Torpedo, the Sea-Robin, the Anemone, the Mississippi Catfish, the Alligator Gar, the Dog Fish, the Goose Fish, the Drum, the Sculpin, the Sea Raven, the Sea Horse.

Then there will be the Carp, the Sun Fish, the Mullet, the Mollusks, Sturgeon, the Buffalo, the Spoonbill Catfish.

But the Fisheries Department will by no means stop with filling its aquarium: the expatriated fish will have their usual environment supplied by the art of man, and algæ, and aquatic plants will create at least a verisimilitude to their native waters. Sea-urchins, sea-cucumbers, the industrious and tiny coral insect, and other inhabitants of the vast deep will learn at Chicago how the art of man can create an ocean in the midst of

the prairie quite as well as the patient Hollander could wrest his flourishing territory from the dominion of the sea. But to accomplish the objects which justify the continuous efforts of the Fish Commission something beyond pleasurable surprise must be excited. Hence there will be displayed every step in that process of pond culture which is our only hope of repairing the loss caused by the wasteful spoliation of unreflecting and ignorant men. In America every farmer may, if he will, imitate the emperors of yore and be served with the choicest fish from his own domains.

Still there are yet other attractions so numerous as to make one think that the whole time at his command could profitably be spent in the study of this single exhibit. The American has always been a lover of sport and the angler will find at The World's Columbian Exposition the most complete collection of all that pertains to the art. Fishing tackle from the primitive thread and bent pin up to the latest improvement upon the neatly jointed split bamboo. Every style of fishing camp and fishing outfit; hooks which represent as great variety in size and use as the Corliss and the pigmy engines of the Philadelphia Centennial; fishing lines of silk, of cotton, of flax, and of hair, and varying from the most slender filament to the piscatorial cables required for holding the fiercest shark; spears, nets, torches, and all similar devices for dealing with fish which refuse to rise to the hook; every variety of bait, especially the infinite varieties of artificial flies; these objects will form a collection which will please by its brilliant beauty even those whose sole associations with fishing consist of tiresome stories tediously told.

Furthermore the Department has accepted the

scientific presentation by the "Comparative Study of Evolution," so that one may expect to trace the development of the art from the first rude efforts of pre-historic man down to the most complete outfit of the modern Nimrod whose expenditures have no limit but his fancies.

Still further to provide information for the ignorant and to promptly settle the controversies which are ever arising between enthusiastic votaries of the piscatorial art, there will be a library sufficiently complete to furnish the authoritative works of reference as well as those graceful meditations which have embalmed the name of Izaak Walton.

Then too that the dull fancies of visitors may be stimulated to inquiry there will be the best that art can furnish in the way of paintings, engravings, drawings, models, and photographs.

What promise could be more charming for one who would escape for a brief moment from the corroding cares of daily life, and enjoy to the full the joys which inspired the writings of the good old English angler?

THE FORESTRY BUILDING.

The Forestry Building is in appearance the most unique of all the Exposition structures. Its dimensions are 200 by 500 feet. To a remarkable degree its architecture is of the rustic order. On all four sides of the building is a veranda, supporting the roof of which is a colonnade consisting of a series of columns com-

posed of three tree-trunks each 25 feet in length, one of them from 16 to 20 inches in diameter and the other smaller. All of these trunks are left in their natural state, with bark undisturbed. They are contributed by the different States and Territories of the Union and by foreign countries, each furnishing specimens of its most characteristic trees. The sides of the building are constructed of slabs with the bark removed. The window frames are treated in the same rustic manner as is the rest of the building. The main entrances are elaborately finished in different kinds of wood, the material and workmanship being contributed by several prominent lumber associations. The roof is thatched with tan and other barks. The visitor can make no mistake as to the kinds of tree-trunks which form the colonnade, for he will see upon each a tablet upon which is inscribed the common and scientific name, the State or country from which the trunk was contributed, and other pertinent information, such as the approximate quantity of such timber in the region whence it came. Surmounting the cornice of the veranda and extending all around the building are numerous flagstaffs bearing the colors, coats-of-arms, etc., of the nations and States represented in the exhibits inside.

THE ART PALACE.

Grecian-Ionic in style, this building is a pure type of the most refined classic architecture. The building is oblong and is 500 by 320 feet, intersected north, east, south and west by a great nave and transept 100

feet wide and 70 feet high, at the intersection of which is a great dome 60 feet in diameter. The building is 125 feet to the top of the dome, which is surmounted by a colossal statue of the type of famous figures of winged victory. The transept has a clear space through the center of 60 feet, being lighted entirely from above.

On either side are galleries 20 feet wide, and 24 feet above the floor. The collections of the sculpture are displayed on the main floor of the nave and transept, and on the walls of both the ground floor and of the galleries are ample areas for displaying the paintings and sculptured panels in relief. The corners made by the crossing of the nave and transept are filled with small picture galleries.

Around the entire building are galleries 40 feet wide, forming a continuous promenade around the classic structure. Between the promenade and the naves are the smaller rooms devoted to private collections of paintings and the collections of the various art schools. On either side of the main building are several one-storied annexes, divided into large and small galleries. These annexes are 120 by 200 feet wide.

The main building is entered by four great portals, richly ornamented with architectural sculpture, and approached by broad flights of steps. The walls of the loggia of the colonnades are highly decorated with mural paintings, illustrating the history and progress of the arts. The frieze of the exterior walls and the pediments of the principal entrances are ornamented with sculptures and portraits in bas-relief of the masters of ancient art.

The general tone or color is light gray stone.

The construction, although of a temporary character, is necessarily fire-proof. The main walls are of solid brick, covered with "staff," architecturally ornamented, while the roof, floors and galleries are of iron.

All light is supplied through glass sky-lights in iron frames.

The building is located beautifully in the northern portion of the Park, with the south front facing the Lagoon. It is separated from the Lagoon by beautiful terraces, ornamented with balustrades, with an immense flight of steps leading down from the main portal to the Lagoon, where there is a landing for boats. The north front faces the wide lawn and the group of State buildings. The immediate neighborhood of the building is ornamented with groups of statues, replica ornaments of classic art, such as the Choriagic monument, the "Cave of the Winds," and other beautiful examples of Grecian art. The ornamentation also includes statues of heroic and life-size proportions.

This building cost between \$500,000 and \$600,000.

The Art Palace was planned in the World's Fair Construction Department under the eye of Supervising Architect D. H. Burnham, and the details worked out by Chief Designer P. B. Atwood; the annex is substantially, in its facade at least, the outline plan, left by the late consulting architect, George W. Root.

The Department of Fine Arts has been subdivided so as to represent the interests included under Architectural Progress, Monumental Decoration, Civil Engineering, Public Buildings, Private Buildings, Foundations and Estimates, and Working Plans for Mason, Carpenter, and Painter.

THE GOVERNMENT BUILDING.

The Government Building will in its architecture follow the Grecian style which characterizes the finest of the Federal buildings. Its dimensions will be 420x350 feet and its dome will have a height 150 feet and a diameter of 120 feet. It will provide quarters for the exhibits from the War Department, the Bureau of Agriculture, the Treasury Department, and the Post-office Department.

HORTICULTURAL BUILDING.

Immediately south of the entrance to Jackson Park from the Midway Plaisance, and facing east on the lagoon, is the Horticultural Building. In front is a flower terrace for outside exhibits, including tanks for *Nymphæa* and the *Victoria Regia*. The front of the terrace, with its low parapet between large vases, borders the water, and at its center forms a boat landing.

The building is 1,000 feet long, with an extreme width of 250 feet. The plan is a central pavilion with two end pavilions, each connected with the central one by front and rear curtains, forming two interior courts, each 88 by 270 feet. These courts are beautifully decorated in color and planted with ornamental shrubs and flowers. The center of the pavilion is roofed by a crystal dome 187 feet in diameter and 113 feet high, under which are exhibited the tallest



palms, bamboos, and tree ferns that can be procured. There are galleries in each of the pavilions. The galleries of the end pavilions are designed for cafés, the situation and the surroundings being particularly adapted to recreation and refreshment. These cafés are surrounded by an arcade on three sides from which charming views of the grounds can be obtained.

In this building are exhibited all the varieties of flowers, plants, vines, seeds, horticultural implements, etc. Those exhibits requiring sunshine and light are shown in the rear curtains, where the roof is entirely of glass and not too far removed from the plants. The front curtains and space under the galleries are designed for exhibits that require only the ordinary amount of light. Provision is made to heat such parts as require it.

The exterior of the building is in "staff," tinted in a soft warm buff, color being reserved for the interior and the courts.

The cost of this building was about \$300,000. W. L. B. Jenny, of Chicago, is the architect.

THE MANUFACTURES AND LIBERAL ARTS BUILDING.

Notable for its symmetrical proportions, the Manufactures and Liberal Arts Building is the mammoth structure of the Exposition. It measures 1,688 by 788 feet and covers more than 31 acres, being the largest Exposition building ever constructed. Within the building a gallery 50 feet wide extends around all four

sides adding more than eight acres to the floor space available for exhibits, and making it 40 acres in all. Projecting from this gallery are 86 smaller galleries, 12 feet wide, from which visitors may survey the vast array of exhibits and the busy scene below. "Columbia Avenue," 50 feet wide extends through the mammoth building longitudinally and an Avenue of like width crosses it at right angles at the center. The main roof is of iron and glass and arches an area 385 by 1,400 feet and has its ridge 150 feet from the ground.

The Liberal Arts Building is in the Corinthian style of architecture and in point of being severely classic, excels nearly all of the other edifices. The long array of columns and arches, which its façades present, is relieved from monotony by very elaborate ornamentation. In this ornamentation female figures, symbolical of the various arts and sciences, play a conspicuous and very attractive part.

Designs showing in relief the seals of the different States of the Union and of various Foreign Nations also appear in the ornamentation. These, of course, are gigantic in their proportions. The Agricultural Building perhaps is the only one which has a more elaborately ornamental exterior than has this colossal structure.

The exterior of the building is covered with "staff," which is treated to represent marble. The huge fluted columns and the immense arches are apparently of this beautiful material. The grand entrances at the corners of the building and midway at the sides consist of lofty arches in piers of elaborate design and ornamentation. There are numerous other entrances less imposing.

The architect of this gigantic building, George B. Post, of New York, has been remarkably successful in giving architectural symmetry and effectiveness to the immense proportions with which he had to deal and his work stands as one of the marvels of the Exposition.

The building occupies a most conspicuous place in the grounds. It faces the Lake, with only lawns and promenades between. North of it is the United States Government Building, south the Harbor and in-jutting Lagoon, and west the Electrical Building and the Lagoon separating it from the Wooded island.

THE MACHINERY HALL.

Machinery Hall, of which Peabody & Stearns, of Boston, are the architects, has been pronounced by many architects second only to the Administration Building in the magnificence of its appearance. This building measures 850x500 feet, and with the Machinery Annex and Power House, cost about \$1,000,000. It is located at the extreme south end of the Park, midway between the shore of Lake Michigan and the west line of the Park. It is just south of the Administration Building, and west and across a Lagoon from the Agricultural Building. The building is spanned by three arched trusses, and the interior presents the appearance of three railroad train-houses side by side, surrounded on all of the four sides by a gallery 50 feet wide. The trusses are built separately, so that they can be taken down and sold for use as railroad train-houses. In each of these long naves there is an elevated

traveling crane running from end to end of the building, for the purpose of moving machinery. These platforms are built so that visitors may view from them the exhibits beneath. The power for this building is supplied from a power-house adjoining the south side of the building. The two exterior sides adjoining the Grand Court are rich and palatial in appearance.

All of the buildings on this great plaza are designed with a view to making a grand background for display, and, in order to conform to the general richness of the court and add to the striking appearance, the two façades of the Machinery Hall on the court are rich with colonnades and other features. The design follows classical models throughout, the detail being followed from the renaissance of Seville and other Spanish towns, as being appropriate to a Columbian celebration. An arcade on the first story admits passage around the buildings under cover, and as in all the other buildings, the front is formed of "staff" colored to an attractive tone; the ceilings are enriched with strong color. A colonnade with a café at either end forms the length between Machinery and Agricultural Halls, and in the center of this colonnade is an archway leading to the Cattle Exhibit. From this portico there extends a view nearly a mile in length down the Lagoon, and an obelisk and fountain in the Lagoon form the southern point of this vista.

The Machinery Annex adjoins Machinery Hall on the west, and is an annex in fact, and not a detached structure as at first planned, with entrance by subways under the railway tracks. The Annex covers between four and five acres and increases the length of the Machinery building to nearly 1,400 feet, thus rendering

it the second largest of all the Exposition structures, the great manufactures building alone exceeding it in size.

THE TRANSPORTATION BUILDING.

Forming the Northern or Picturesque Quadrangle is a group of buildings of which the Transportation Building is one. It is situated at the southern end of the west flank and lies between the Horticultural and the Mines Building. Its axial relation is with the Manufactures Building on the east side of the Quadrangle, the central feature of each of the two buildings being on the same east and west line.

The Transportation Building is exquisitely refined and simple in architectural treatment, although it is very rich and elaborate in detail. In style it savors much of the Romanesque, although to the initiated the manner in which it is designed on axial lines and the solicitude shown for fine proportions, and subtle relation of parts to each other, will at once suggest the methods of composition followed at the *École des Beaux Arts*.

Viewed from the Lagoon, the cupola of the Transportation Building will form the effective southwest accent of the Quadrangle, while from the cupola itself, reached by eight elevators, the Northern Court, the most beautiful effect of the entire Exposition, may be seen in all its glory.

The main entrance to the Transportation Building will consist of an immense single-arch enriched to an extraordinary degree with carvings, bas-reliefs and

mural paintings, the entire feature forming a rich and beautiful yet quiet color climax, for it is treated in leaf and is called the golden door.

The remainder of the architectural composition falls into a just relation of contrast with the highly wrought entrance, and is duly quiet and modest though very broad in treatment. It consists of a continuous arcade with subordinated colonnade and entablature. Numerous minor entrances are from time to time pierced in the walls, and with them are grouped terraces, seats, drinking fountains and statues.

The interior of the building is treated much after the manner of a Roman Basilica, with broad nave and aisles. The roof is therefore in three divisions; the middle one rises much higher than the others, and its walls are pierced to form a beautiful arcaded clear-story. The cupola, placed exactly in the center of the building and rising 165 feet above the ground, is reached by eight elevators. These elevators will of themselves naturally form a part of the Transportation Exhibit, and as they will also carry passengers to galleries at various stages of height, a fine view of the interior of the building may easily be obtained. The main galleries of this building, because of the abundant placing of passenger elevators, will prove quite accessible to visitors.

The main building of the Transportation Exhibit measures 960 feet front by 256 feet deep; from this will extend westward to Stony Island avenue, a triangular Annex covering about nine acres, and consisting of one-story buildings 64 feet wide, set side by side. There will be a railway track every 16 feet and all these tracks will run east and west. These Annex

buildings may be used to exhibit an entire freight or passenger train coupled up with its engine. It is likely that the display of locomotive engines will be quite stupendous, for they will be placed end on to the central avenue or nave of the main building. As there will probably be at least 100 engines exhibited, and placed so as to face each other, the perspective effect of the main avenue will be remarkably effective. Add to the effect of the exhibits the architectural impression given by a long vista of richly ornamented colonnade, and it may easily be imagined that the interior of the Transportation Building will be one of the most impressive of the Exposition.

The exhibits to be placed in the building will naturally include everything of whatsoever name or sort devoted to the purpose of Transportation, and will range from a baby carriage to a mogul engine, from a cash conveyor to a balloon or carrier pigeon. Technically, this exhibit will include everything comprised in Class G of the Official Classification.

To assist in the placing of exhibits, a transfer railway with 75 foot tables will run the entire length of the structure and immediately west of the main building.

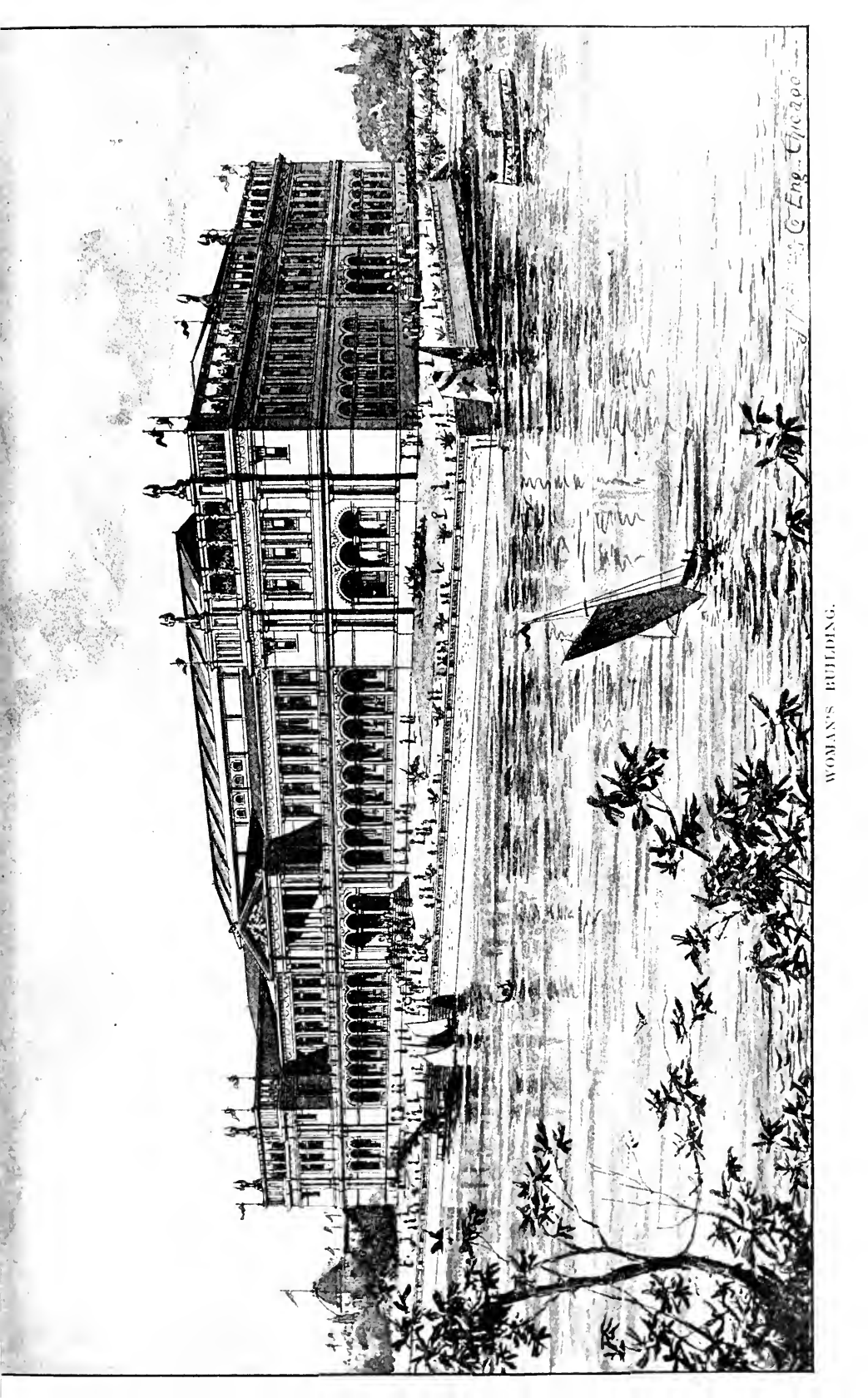
The gross railroad earnings for 1889 are stated as one billion, six hundred and thirty-six thousand, five hundred and ninety-six dollars; the nets, three hundred and twenty-two millions, two hundred and eighty-four thousand, nine hundred and eighty-six dollars.

There will be exhibited every known means of transportation together with all the various appliances. In this connection it may be well to remind the reader of the great works in bridge building which have become famous.

THE DAIRY BUILDING.

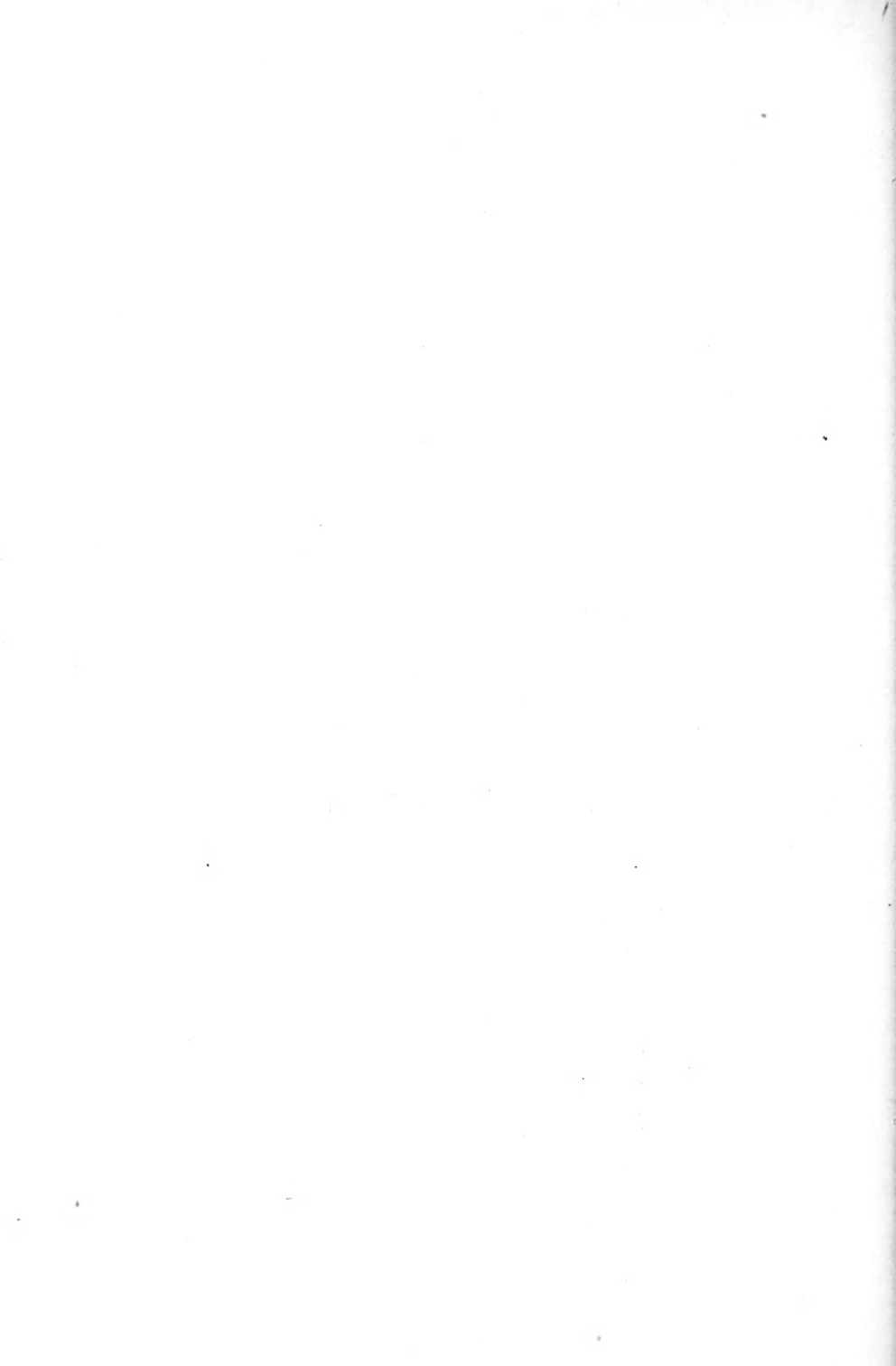
The Dairy Building, by reason of the exceptionally novel and interesting exhibits it will contain, is quite sure to be regarded with great favor by World's Fair visitors in general, while by agriculturists it will be considered one of the most useful and attractive features of the whole Exposition. It was designed to contain not only a complete exhibit of dairy products, but also a Dairy School, in connection with which will be conducted a series of tests for determining the relative merits of different breeds of dairy cattle as milk and butter producers.

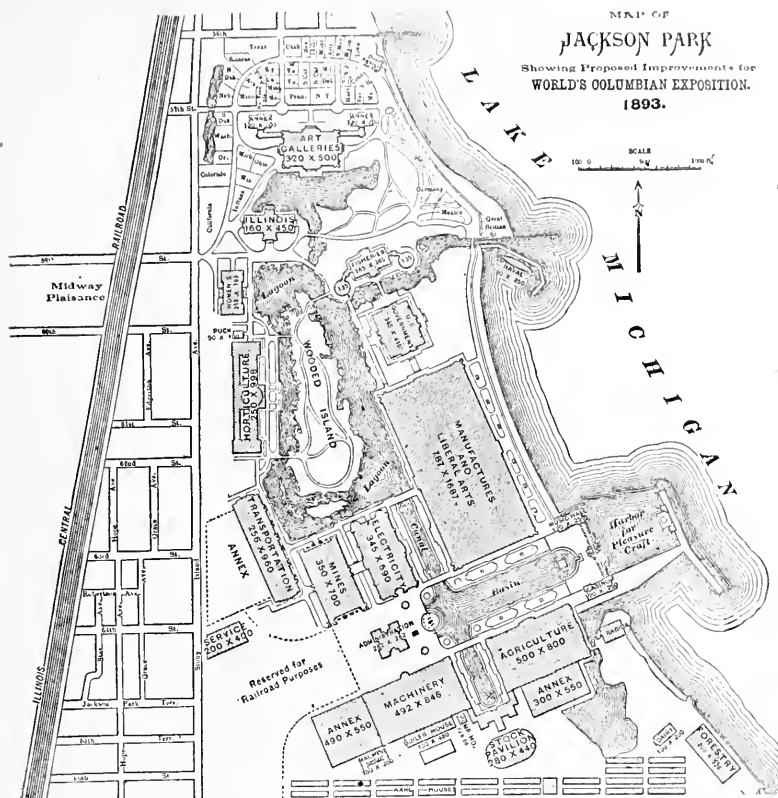
The Building stands near the lake shore in the southeastern part of the park, and close by the general live stock exhibit. It covers approximately half an acre, measuring 95x200 feet; is two stories high, and cost \$30,000. In design it is of quiet exterior. On the first floor, besides office headquarters, there is in front a large open space devoted to exhibits of butter, and farther back an operating-room, 25x100 feet, in which the Model Dairy will be conducted. On two sides of this room are amphitheater seats capable of accommodating 400 spectators. Under these seats are refrigerators and cold storage rooms for the care of the dairy products. The operating-room, which extends to the roof, has on three sides a gallery where the cheese exhibits will be placed. The rest of the second story is devoted to a cafe, which opens on a balcony overlooking the lake.



WOMAN'S BUILDING.

J. H. & C. Eng. Chicago





THE WOMAN'S BUILDING.

Encompassed by luxuriant shrubs and beds of fragrant flowers, like a white silhouette against a back ground of old and stately oaks, is seen the Woman's Building, situated in the northwestern part of the Park, separated by a generous distance from the Horticultural Building on the one side, and the Illinois State Building on the other, and facing the great Lagoon with the Wooded Island as a vista. A more beautiful site could not have been selected for this daintily designed building.

Amongst a great number of sketches submitted in competition for this building by women from all over

the land, it did not take the President of the Board of Lady Managers, Mrs. Potter Palmer, long, with her exquisite taste, to decide upon her choice. She quickly discovered in the sketch submitted by Miss Sophia G. Hayden that harmony of grouping and gracefulness of details which indicate the architectural scholar, and to her was awarded the first prize of a thousand dollars, and also the execution of the design. The second and third prizes were given respectively to Miss Lois L. Howe, of Boston, and Miss Laura Hayes, of Chicago, both fully deserving the honors conferred upon them.

Miss Hayden, who, as a pupil in the architectural class in the School of Technology, in Boston, graduated with high honors, immediately went to Chicago and personally made the plans and elevations for the building.

Directly in front of the building the Lagoon takes the form of a bay, about 400 feet in width. From the center of this bay a grand landing and staircase leads to a terrace six feet above the water. Crossing this terrace other staircases give access to the ground, four feet above, on which about 100 feet back, the building is situated. The first terrace is designed in artistic flower beds and low shrubs, forming, together with the creamy-white balustrades rising from the water's edge, and also in front of the second terrace, a charming foreground for the fine edifice. The principal façade has an extreme length of 400 feet, the depth of the building being half this distance, Italian renaissance is the style selected. Its delicacy of lines is well adapted to represent this temple for the fair sex.

The main grouping consists of a center pavilion flanked at each end with corner pavilions connected

in the first story by open arcades in the curtains, forming a shady promenade the whole length of the structure. The first story is raised about ten feet from the ground line, and a wide staircase leads to the center pavilion. This pavilion, forming the main triple arched entrance with an open colonnade in the second story, is furnished with a low and beautifully proportioned pediment enriched with a highly elaborate bas-relief. The corner pavilions, being like the rest of the building, two stories high, with a total elevation of 60 feet, have each an open colonnade added above the main cornice. Here are located the Hanging Gardens, and also the committee rooms of the Board of Lady Managers.

A lobby 40 feet wide leads into the open rotunda, 70x65 feet, reaching through the height of the building and protected by a richly ornamented skylight. This rotunda is surrounded by a two story open arcade, as delicate and chaste in design as the exterior, the whole having a thoroughly Italian court-yard effect, admitting abundance of light to all rooms facing this interior space. On the first floor, on each side of the main entrance and occupying the entire space of curtains, are located, on the left hand, a model hospital, on the right a model kindergarten, each occupying 80x60 feet.

The whole floor of the south pavilion is devoted to the retrospective exhibit, the one on the north to reform work and charity organization. Each of these floors is 80x200 feet. The curtain opposite the main front contains the library, bureau of information, records, etc.

In the second story, above the main entrance and curtains, are located ladies' parlors, committee rooms and dressing rooms, all leading to the open balcony in front, and commanding a splendid panorama of almost

the entire ground. The whole second floor of the north pavilion incloses the great Assembly-room and Club-room. The first of these is provided with an elevated stage, where wise words will be heard from pretty lips. The south pavilion contains the model kitchen, refreshment rooms, reception rooms, etc.

The building is constructed of "staff," the same material used for the rest of the buildings, and as it stands with its mellow, decorated walls, bathed in the bright sunshine, the women of the country are justly proud of the result.

Many have been the spheres assigned to woman, but it was reserved for America to appreciate that no successful solution of the question as to "Woman's Mission" could be found unless woman herself dealt with the problem. We assume that women throughout the civilized world are interested in ascertaining their own capabilities and adaptations rather than in seeking to establish a matriarchate to wrest from man the spoils of political or industrial life, or to secure any one of the numerous privileges sought. To us the various manifestations of woman's self-assertion are symptoms of the unrest which attends periods of transition during which the past is no guide to the present and the present no clear indication of the future. Women of genuine learning have been known since the days of the legendary Sappho; the universities during Spain's most palmy days of intellectual activity included in their faculties illustrious women.

* A conscientious student of women's recognition in directions other than domestic furnishes the following evidences of women other than those who have sat on

* Miss Kate E. Saughnessy, of St. Louis.

the throne having been recognized as co-workers with man.

In the thirteenth century the chair of Philosophy at Bologna was filled by Accorea-Accorea.

In 1236 Bettisia Gozzodini was created Doctor of Laws and wrote upon Philosophy, Law and Jurisprudence.

In 1732 Laura Bassi received the degree of Doctor of Civil Law, maintained public discussions prior to her admission to the Academy of Science, became famous for a knowledge of mathematics and natural science, carried on for twenty-eight years a course of experiments in physics, and was invited by the Senate of the University to become its public lecturer.

Gaetani Agnesi (fl. 1718-1799), surnamed the Walking Polyglot, was at thirteen thoroughly versed in Hebrew, Greek, Spanish, French, and other languages; and later filled the Chair of Mathematics at the University of Bologna. Her *Analytical Institutes* are said to have popularized Algebra in Italy, and were translated by Professor Colson of Cambridge University: it was pronounced by Fontenelle the highest authority upon its subject.

In 1794 Clotilde Tambroni was Professor of Greek at the University of Bologna.

In 1758 Donna Morandi Marzolini occupied the Chair of Anatomy at Bologna, and notably advanced medical science by inventing and perfecting anatomical preparations in wax.

In the fourteenth century Novella Calderini and Novella d'Andrea lectured on Law and Jurisprudence.

Padua conferred a doctorate upon Elena Cornavo, poet, musician, linguist, mathematician and astronomer.

The well-known Mary Somerville gave in English an acceptable summary of LaPlace's *Mécanique Céleste*, wrote *The Connection of the Physical Sciences*, and a popular *Physical Geography*, earning for herself a foremost place among the votaries of science.

Caroline Herschel discovered eight comets, made all the reductions and mathematical calculations for her more famous brother, and prepared the way for the work of Sir John by her *Reduction and Arrangement in the Form of a Catalogue in zones of all the Star Clusters and Nebulæ* observed by William Herschel. This effort met with such appreciation on the part of English savants that the Royal Astronomical Society rewarded Miss Herschel with election as an honorary member, and with the award of its gold medal.

Catherine Scarpellini prepared the earliest catalogue of meteors observed in Italy, and received distinguished notice from numerous scientific bodies because of her successful study of the probable influence of the moon upon earthquakes.

The manikin, now regarded as indispensable for the lecturer upon physiology, was invented by Madame Du Coudray, who used it in her public lectures.

No name is better known in America than that of Miss Maria Mitchell, the astronomer.

These names are mentioned as illustrations of the fact that woman's mental versatility had been settled long before such popular discussions as those to be found in *Sex in Education*.

In Literature all readers are too much indebted to women writers to question their success.

The Philadelphia Centennial owed its success to the

devoted labors and invincible faith of a small band of noble women.

The Sanitary Fairs which proved so helpful an auxiliary during our Civil War owed their inception and success to woman's efforts.

The Woman's Building at Chicago is among the most costly and expensive of the structures evoked by interest in rendering rational American patriotism and in reading some meaning into the ordinarily empty truth of America's discovery by Christopher Columbus. It was, as has been stated before, designed by a woman architect who has thus challenged comparison between the work of man and woman. It is in contemplation to exhibit within its halls the result of woman's labor beyond the walls of the household, and it is safe to predict that the visiting public will be instantly driven from the position which assumes woman's mission to be that of a satellite to man, over to that which assumes that woman as well as man is under obligations to seek her fullest and freest evolution and which does not accept even the possibility of nature's laws being set aside even by so fascinating a power as woman's wiles.

But it was reserved for our own times and our own country to abolish all educational disabilities dependent solely upon sex, and the results of the education of women seems to have justified none of the dire forebodings to be found in a once popular work entitled, "Sex in Education." Education without limit as to its extent is now recognized as a universal privilege open to any one who seeks its enjoyment.

So, likewise, the professions of law, medicine, theology, and journalism have been successfully prose-

ented by women who in many cases at least seem to have lost none of their feminine graces.

It still remains true that while all women do not seek the political right of suffrage, that most women seek to test the question of woman's inferiority, and to ascertain what disabilities are the result of human institutions instead of divine constitution. And while the mistakes inevitable, together with the vagaries of the least intelligent may lead the careless to underrate the living force of this social movement and to mistake for caprice a determined resolution, yet a comparison of the woman of to-day with her sisters of times past must satisfy any honest inquirer that much has been accomplished in the matter of a proper enfranchisement.

The women of America have decided that no such exhibition of modern progress as that contemplated by the World's Columbian Exposition would be at all complete without adequate recognition of woman's work, as a complement to woman's worth, and hence they have insured the erection of The Woman's Building.



CHAMBER OF COMMERCE.



INVENTIONS PATENTED BY WOMEN

from 1809 to 1889, according to the Patent Office Records at Washington, D. C.

Instruments.....	80 or 4 per cent.
Processes.....	62 or 3 per cent.
Pharmacy.....	73 or 4 per cent.
Manufactures and Machinery.....	379 or 19 per cent.
For the Household.....	803 or 42 per cent.

This leaves for Dress and Appliances for the Toilet 560 or 28 per cent.

That is to say but 560 out of 1,971 patents issued concern interests lying within what is generally regarded as "Woman's Sphere," and yet the inventors do not seem to have "unsexed" themselves.

The pioneer was Mary Kies who on May 5, 1809, received a patent for "Straw Weaving with Silk or Thread."

May 20, 1826, Phœbe Collier patented "Wheel Fellies for Sawing."

Feb. 2, 1828, Elizabeth H. Buckley appears with a "Sheet Iron Shovel."

Feb. 3, 1831, Emma Stienhouer produces a Cook Stove.

Dec. 20, 1831, Laura Bishop patents Bellows.

March 4, 1834, Ethel H. Porter enters a Straw and Fodder Cutter.

April 30, 1834, Phebe Atwell invents a machine for extracting fur from skins and for manufacturing it into yarn.

Feb. 2, 1839, Eliza Ann B. Judkins receives a patent for Shedding.

June 25, 1839, Sarah Hammond patents a Fire-Place.

April 16, 1845, Sarah P. Mather invents a Submarine Telescope and Lamp.

March 20, 1849, Tilly Flint patents a Weighing Scale.

May 31, 1853, a patent is issued to Marie Louise Roucout for a Furnace Grate Bar.

MISSOURI AND ITS WOMEN INVENTORS.

Missouri has contributed to the rolls of the United States Patent Office the following names of women and their inventions:

Catharine A. Williamson, St. Louis:

Corset Stay, 1881.

Street Car, 1886.

Gasoline Stoves, 1886.

Seat for Bicycles, 1887.

Corset, 1887.

Shoulder Braces, 1880.

Emma Rawlings, St. Louis:

Pillow-Sham Support, 1883.

Shoulder-Brace, 1880.

Louise J. Purdy, St. Louis:

Pattern Tracer, 1883.

Self-Shaking Sifter for Sand, 1882.

Clementina J. M. Hayne, St. Louis:

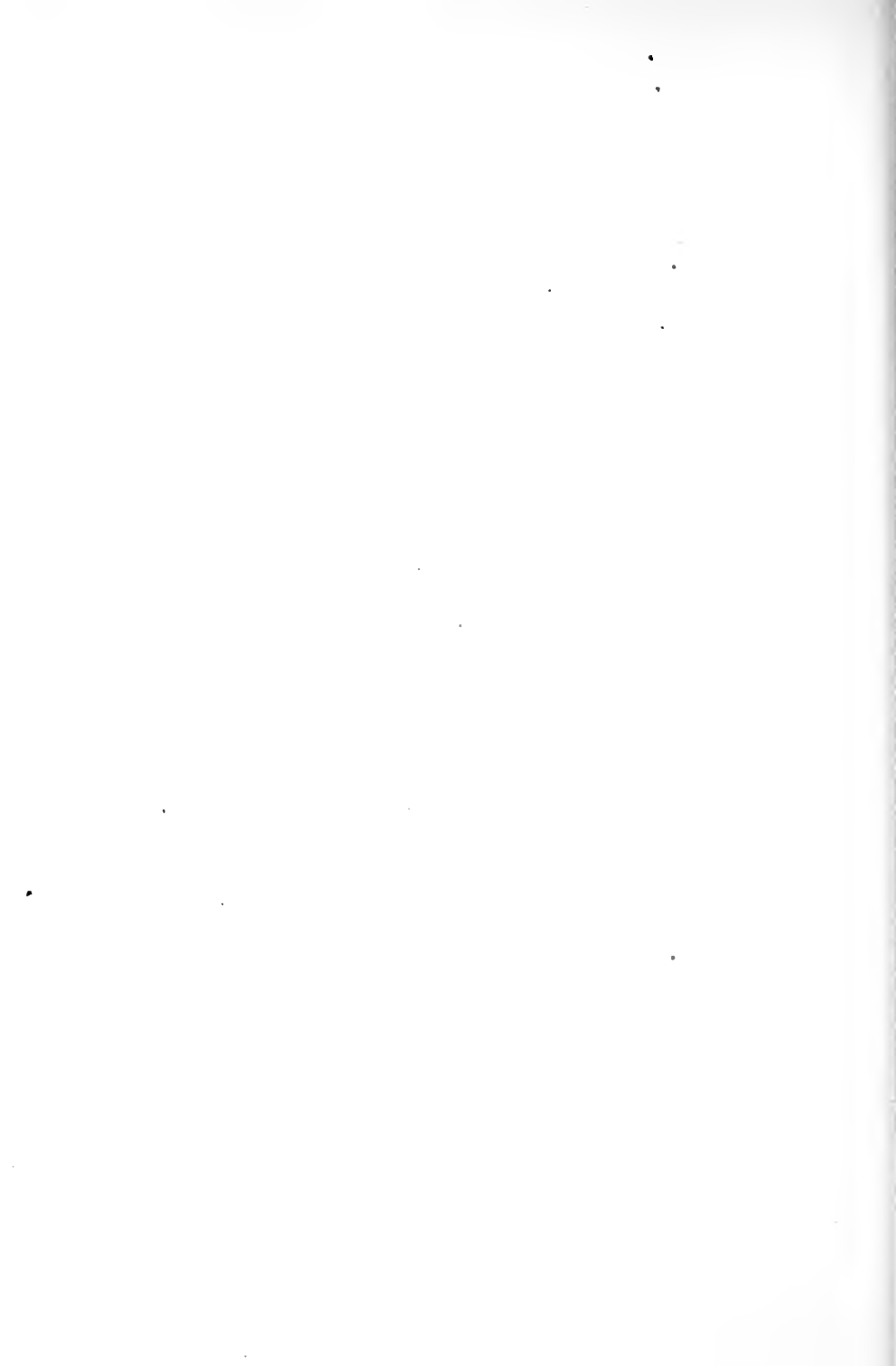
Air-Feeding Grate-Bar, 1883.

Furnaces, 1887.

Steam Boiler, 1888.



AN INLAND LAKE, LINCOLN PARK,



- Anna B. Dorman, Cape Girardeau :
Medical Compound, 1872.
Ditto, 1872.
- Ellen T. Cram, Kansas City :
Improvement in Hair Curling, 1872.
Ditto, 1873.
- Belle Epperly, Lamar :
Corset, 1887.
- Sarah H. Weltner, Wellsville :
Curtain Fixture, 1887.
- Phebe Parmenter, Lamar :
Corset and Bustle, 1888.
- Amelia Kahn, St. Joseph :
Eye-Glasses, 1888.
Ditto, 1888.
- Mary Hobson, Williamsburg :
Improved Dish Washer, 1870.
- Virginia — Mary I. Goldsmith, The Plains :
Combined Plant Setter and Fertilizer Distributor,
1881.
- California — Rebecca J. Jacobus, Oakland :
Absorbent Cowle for Chimneys for Hydro-Carbon
Burners, 1885.
- Mary E. Carpenter, San Francisco :
Improvements in Sewing-Machine Feeding Mech-
anisms, 1871.
- Rose O. Donnell, San Francisco :
Attachments for Invalid Beds, 1879.
- Nebraska — Mary Jeffries Whaley Lincoln :
Covering the Slot of Cable Roads, 1882.
- Maryland — Virginia L. Watts, Baltimore :
Artificial Marble, 1881.
Ornamenting Artificial Marble, 1881.

Catharine Fink, Baltimore :

Oil Dressing for Leather, 1881.

Colorado — Elizabeth A. Burns, Meadow Lake :

Improvement in Desulphurizing Ores, 1870.

Pennsylvania—Anna Connelly, Philadelphia :

Fire Escape, 1887.

Sarah Slater, Philadelphia :

Improvement in Compounds for Welding, Hardening and Tempering Steel, 1875.

Emily E. Tassey, Pittsburg : (McKeesport.)

Improvement in Siphon-Propeller Pumps, 1876.

Siphon-Propeller Pump, 1880.

Betsey Ann Worden, Scranton :

Improvement in Car Couplings, 1872.

Maria E. Beasley, Philadelphia :

Barrel-Hoop Driving Machine, 1881.

Barrel-Making Machine, 1884.

Life Raft, 1882.

Barrel-Stave Shaping Machine, 1884.

Machine for Driving Hoops upon Casks, 1882.

Susan L. Sinclair, Allegheny :

Method of Filling the Recesses in the Tread Car Wheels, 1885.

Lilly B. Tubbs, Philadelphia :

Cut-Off for Hydraulic and other Engines, 1885.

Martha E. Beasley, Philadelphia :

Steam Generator, 1886.

Celia P. Clark, Lock Haven :

Improvement in Needle-Sharpening.

Attachments for Sewing-Machines, 1871.

Mary E. Antrum, Philadelphia :

Attachment for Sewing Machines, 1871.

Jessie Conner, Philadelphia :

Heat Radiator, 1866.

Victoria Quarre Wedekind, Philadelphia :

Improvement in Engraving Copper, 1866.

Sarah Tulton, Tunkhannock :

Improvement in Presser Feet for Sewing Machines,
1869.

Elizabeth M. Stigale, Philadelphia :

Rail for Ornamental Fences, 1869.

Ohio — Florence Marmet, Cincinnati :

Improvement in Elevators and Conveyors for
Crushers, 1877.

Mary A. Thornton, Perryville :

Improvement in Photographers' Refrigerators.

Elizabeth Holt, Pittsburg :

Piston Rods, 1877.

Cornelia E. Beaumont, Cleveland :

Life Boats, 1877.

Mary C. Smith Flanigan, Cleveland :

Fire Escape, 1878.

Sarah A. Haydock, Ostrander :

Car Couplings, 1878.

New York — Augusta M. Rodgers, Brooklyn :

Improvement in Evaporating Attachments for
Heater, 1874.

Improvement in Railroad Car Heater, 1871.

Mary A. Alvord, New York City :

Improvement in Spout Attachments in Dumping-
Carts, 1875.

Mary A. Chapin, New York City :

Improvement in Street Lamps, 1874.

Emily Rochow, Brooklyn :

Improvement in Centrifugal Sugar Machines, 1876.

- New York — Ida C. Himmer, New York City:
Electric Battery, 1884.
- Annabella G. Knox, New York City:
Dough Mixers, 1877.
- Cornelia A. Sheldon, Amity:
Fire Escapes, 1877.
- Catherine R. Mott, New York City:
Fire Escapes, 1878.
- Mary E. Walton, New York City:
Improvement in Locomotive Chimneys, 1879.
- Felice Tocci, New York City:
Fire Escape, 1880.
- Hannah Milson, Buffalo:
Ozone Machine, 1876.
- Augusta M. Rodgers, Brooklyn:
Improvement Spark Arrestors, 1872.
Improved Conveyors of Smoke and Cinders for
Locomotives, 1871.
- Hannah B. Mountain, New York City:
Life-Preserving Mattress, 1872.
Ditto, 1872.
- Ella N. Gaillard, New York City:
Electric Illuminating Apparatus, 1886.
- Gracie C. Roberts, Rockville Centre:
Hardening Iron, 1878.
Sewer Pipes, 1886.
Ditto, 1886.
- Ida C. Hemmer, New York City:
Electric Winding Device for Clocks, 1886.
- Eliza Dexter Murfey, New York City:
Improvement in Material for Packings and Bearings, 1870.
Improvement in Impregnating Fibrous Materials

with Powdered Substances for Bearings and Packings, 1870.

Improvements for Materials in Packings and Bearings, 1870.

Augusta Gest, Brooklyn :

Improvement in Fire Alarm Thermometers, 1870.

Carrie R. Laman, Painted Post :

Improvement in Lubricating Railway Journals, 1871.

Elizabeth Bellinger, Mohawk :

Improvement in Composition Fuel, 1857.

Abbey S. Smith, Lockport :

Improved Mechanism for Starting Sewing-Machines, 1863.

Mary W. Welly, New York City :

Shield for Sewing-Machines, 1870.

Ellen L. Demorest, New York City :

Automatic Floor for Elevator Shafts, 1882.

Harriet R. Tracy, New York City :

Fire Escape, 1883.

Ella M. Freeley, New York City :

Artificial Russian Leather, 1883.

New Jersey — Harriet B. Devian, Jersey City :

Improvement in Packing for Rail Road Journal Boxes, 1874.

Amanda L. Waggoner, Bridgeport :

Improvement in Station Indicators, 1876.

Emma Seligman, Irvington :

Mechanical Telephone, 1884.

Emma Walsh, Elizabeth :

Elevator, 1884.

Massachusetts — Helen M. Macker, Boston :

Alloys to imitate Silver, 1872.

Alloy or Bell Metal, 1872.

Ditto, 1872.

Alloys for Hardening Iron, 1872.

Ditto, 1872.

Amalgams for Coating Harness Trimmings, 1872.

Katherine E. Holmes, Cambridgeport:

Improvement in Railway Car Safety Apparatus,
1871.

Annie Getchell, Boston:

Hardening Copper, 1885.

Hannah E. Scales, Newton:

Plastering Compound, 1884.

France — Adèle Elsie Pirsch, Baudvin, Paris:

Improvements in Alloys to resemble Silver, 1873.

Alloys to resemble Silver, 1872.

Caroline Garcin, Colmar:

Mechanism for Driving Screw Machines, 1869.

Marie G. De Barbeeyrac, Paris:

Rectifying Alcohol and other Crude Spirits.

Illinois — Sarah W. Trahne, Girard:

Baling Press, 1887.

Betsey A. Maxey, Knoxville:

Car Coupling, 1885.

Annie M. Jeffers, Chicago:

Fire Escapes, 1886.

Carrie J. Everson, Chicago:

Process for Concentrating Ores, 1886.

Sarah M. Hoyt, Chicago:

Paving Blocks, 1887.

Mary E. Winter, Galesburg:

Adding Machine, 1882.

England — Emma T. L. Clark, London:

Process of Hardening and Preserving Plaster of

Paris Casts and Molds, and making them impervious to water, 1887.

Mary McMullen, Strand :

Electric Brush, 1884.

Henrietta Vansillart, Richmond :

Improved Method of Construction for Screw Propellers, 1869.

Indiana — Luna Wright, Economy :

Improvement in Corn Planters, 1868.

Kansas — Rachel S. Packson, Emporia :

Speculum, 1887.

Louisiana — Dinah J. Loewenstein, New Orleans :

Improvement in the Manufacture of Fertilizers from Night Soil, 1872.

Ditto, 1872.

Marie Dinos, New Iberia :

Cultivator, 1887.

New South Wales — Elizabeth Barnston Parnell, Sidney :

Process of Treating certain Descriptions of Auriferous and Argentiferous Materials, 1887.

Iowa — Cornelia C. Wood, Sibley :

Bunk for Railway Cars, 1887.

District of Columbia — Claudia B. Turnbull, Washington :

Improvement in Street Car Awnings, 1872.

Ditto, 1873.

Mary J. Coston, Washington :

Improvement in Pyrotechnic Night Signals, 1871.

Germany — Frida Kunz, Donaueschingen :

Process of and Apparatus for Preparing Fibre for the Manufacture of Brushes and Brooms, 1884.

Eliza J. Harding, St. Louis :

Abdominal Supporters, 1873.

Mary S. Gage, St. Louis :

Stove, 1888.

Amanda Ellen Shearer, Milan :

Gem Type Fixers, 1886.

Eliza J. Whitlow, Mexico :

Washing Machine, 1882.

Mary J. Chavore, Covington :

Flour-Sifter, 1882.

Maggie M. Harriman, Kansas City :

Corsets, 1877.

Harriet E. Bonham, St. Joseph :

Ear-Muffs, 1879.

Mary Hobson, Williamsburg :

Improved Dish Washer, 1870.

Eilene A. Bailey, St. Charles :

Shoe-Button Needle, 1884.

Needle, 1886.

Margaret H. Wallace, Sedalia :

Hand Easel, 1885.

Anna M. Freeman, Kansas City :

Dress-Cutting Ruler, 1885.

Nancy E. Burch, Carthage :

Flower-Stand, 1885.

Marie Adelia Henderson, Clinton :

Coffee-Pot, 1886.

Mary Sutherland, Diamond :

Composition for Tanning, 1886.

Glennie A. Williams, Kansas City :

Dough Raiser, 1886.

Samantha J. Bugh, St. Joseph :

Improvement in Sad-Irons, 1887.

- Caroline Ferguson, St. Louis :
Clothes-Basket, 1883.
- Lucretia V. Pierce, St. Louis :
Combined Stove, Table and Cabinet, 1883.
- Florence H. Stumpf, St. Louis :
Fluting-Irons, 1878.
- Harriet A. Sawyer, St. Louis :
Dish Heater, 1880.
Hand Easel, 1885.
- Maria Duenkel, St. Louis :
Morning Dress, 1880.
- Mary G. Price, St. Louis :
Tuck Marker for Sewing Machines, 1881.
- Josephine Diel, St. Louis :
Oil Dressing for Leather, 1881.
- Marie E. Patterson, St. Louis :
Tuning-Peg for Musical Instruments, 1884.
- Bridget Murphy, St. Louis :
Grate Appliance, 1884.
- Anna Kendall, St. Louis :
Soap for Restoring Color to Plushes and Velvets,
1885.
- Fannie C. Rawlings, St. Louis :
Cabinet Gasoline Stove, 1885.
- Julia Reinhard, St. Louis :
Waist-Lining, 1885.
- Mary J. C. Van Norstrand, St. Louis :
Corset, 1876.
- Laura E. Hauck, St. Louis :
Improvement in Automatic Fans, 1876.
- Mary Nolan, St. Louis :
Improvement in Building Blocks, 1877.
Improvement in Artificial Stone Composition, 1877.

Rhode Island — Maria L. Ghirardini, Providence :

Improvement in Rails for Street Railways, 1873.

Ditto, 1872.

Arkansas — Caroline S. Brooks, Helena :

Improvement in Methods of Producing Lubricated
Molds in Plaster, 1877.

South Carolina. — Rose H. Goldsmith, Charleston :

Improvement in Bale Ties, 1879.

COLUMBIANA.

The Historical World's Columbian Exposition and Chicago Guide does not propose to enter into competition with Irving and Prescott and Castelar and Justin Winsor and other special biographers of Christopher Columbus, but it considers it germane to its office as a guide to call attention to such Columbiana as are most likely to excite question in the minds of the visitor to The World's Columbian Exposition.

The reproduction of the convent of La Rabida will necessarily recall the story of Columbus' appearance in Spain leading his boy by the hand and applying at the convent door for that hospitality which was always extended to needy travelers. Friar Juan Perez de Marchena well deserves to share in any honors paid to Columbus for without his constant and intelligent interest the great Christopher would probably never have secured a royal audience or finally have found a patron in Queen Isabella. Talavera, the Queen's confessor and Columbus' best friend at court was interested by the good friar Juan Perez.

Columbus' illusions may be illustrated by the following example furnished by Justin Winsor, for it is certain that Columbus "builded better than he knew:" "He argued from what he saw, or thought he saw, that the line of no variation marked the beginning of a protuberance of the earth, up which he ascended as he sailed westerly, and that this was the reason of the cooler weather which he experienced." In regard to the exact spot where Columbus first landed in the West Indies, Mr. Winsor says that any positive statements are of doubtful authenticity but that the prevailing belief among scholars has fixed upon what is known as Watling Island.

Of course, Christopher Columbus, like the rest of frail mortals, varied much in appearance in youth, early manhood, the prime of life, and old age, but that the imagination may be assisted, we reproduce Mr. Winsor's description of Christopher Columbus' personal appearance:

"If we were called upon to picture him as he stood on San Salvador, we might figure a man of impressive stature, with lofty, not to say austere bearing, his face longer by something more than its breadth, his cheek bones high, his nose aquiline, his eyes a light gray, his complexion fair with freckles spotting a ruddy glow, his hair once light but then turned gray. His favorite garb seems to have been the frock of a Franciscan friar."

Mr. Winsor, as the head of the Boston Public Library, and subsequently of the library of Harvard College, has enjoyed unusual opportunities for the study of the various portraits of Columbus and of the evidence in regard to their genuineness. He states,

authoritatively, that the Genoa and Havana likenesses are both unauthentic and poor. The names and dates of the other better known portraits are, The Picture of St. Christopher, 1500, The Jovian Columbus in the Cosmo Gallery, 1575, The Florentine Columbus, 1568, in the Massachusetts Historical Society, The Yanez Portrait, 1763, at Madrid, and De Bry's Portrait, 1595. All of these, doubtless, will be reproduced for The World's Columbian Exposition, and the current books, magazines, and illustrated papers may confidently be looked to for a reproduction of all the less authentic portraiture. For example, *The Cosmopolitan* for February, 1892, contains a very readable article upon "The Columbus Portraits," by William Eleroy Curtis. Mr. Curtis enumerates and describes more or less fully some thirty-three "counterfeit presentments" of the great Christopher Columbus and those who are curious may by the aid of this article quite easily learn to recognize the more familiar engravings. Of these there are owned in America one at Worcester, Mass., one in copy at Philadelphia, one in copy in New York City, the excellent Ellsworth portrait of Chicago, one at Albany, N. Y., one at Danbury, Conn., and the one used by Washington Irving and now the property of the well-known Gunther, of Chicago. All of these, doubtless, will be gathered together in a loan collection by Director Halsey C. Ives, and if the visitor to The World's Columbian Exposition fails to know what Columbus looked like he can at least learn how he has appeared to various artists.

Columbus manuscripts are relatively numerous and most of them have already appeared in book form. We give a specimen of his chirography which is to be found

in Harrisse's Notes. The papers prepared by Columbus, himself, for the city of Genoa, and now deposited in the well-known marble custodia have been copied and will doubtless be accessible to the curious.

According to Justin Winsor, the only authorities of value are Casoni's *Annals of Genoa*, (1708,) Lemoine's *Colombo e la Scoperta dell'America*, (1873), Peter Martyr (1488-1525,) Bernaldez, Oviedo, Fernando Columbus, Harrisse, Las Casas, Humboldt, Arthur Helps, and Major's *Select Letters of Columbus* (1870). In America, Mr. Winsor mentions Hubert Howe Bancroft, and it is proper to add his own scholarly work.

Mr. Winsor in summing up the claims of the more than seven cities which now claim to have been the birthplace of Christopher Columbus, gives the decision of scholars in favor of Genoa.

Columbus was not an avaricious, nor a cruel man; and certainly he was a very pious one; but early in life he made voyages along the coast of Africa, and he was accustomed to a slave trade. Moreover, he was anxious to reduce the expenses of these Indian possessions to the Catholic sovereigns, to prove himself in the right as to all he had said respecting the advantages that would flow to Spain from the Indies, and to confute his enemies at court.

Those who have read the instructions to Columbus given by the Catholic monarchs will naturally be curious to know how the news of these vessels laden with slaves, the fruit of the Admiral's first victory over the Indians, was received by the Sovereigns, recollecting how tender they had been about slavery before. This, however, was a very different case from the former one. Here were people taken in what would

be called rebellion — prisoners of war. Still we find that Ferdinand and Isabella were heedful in their proceedings in this matter. There is a letter of theirs to Bishop Fonseca, who managed Indian affairs, telling him to withhold receiving the moneys for the sale of these Indians that Torres had brought with him until their Highnesses should be able to inform themselves from men learned in the law, theologians, and canonists, whether with a good conscience these Indians could be ordered to be sold or not. The historian Munoz, who has been indefatigable in his researches amongst the documents relating to Spanish America, declares that he cannot find that the point was decided; and if he has failed, we are not likely to discover any direct evidence about the decision. We shall hereafter, however, find something which may enable us to conjecture what the decision practically came to be.

Many of the so-called free Indians in Hispaniola had, perhaps even a worse fate than that which fell to the lot of their brethren condemned to slavery. There free men, seeing the Spaniards quietly settling down on their island, building houses, and making forts, and no vessels in the harbor of Isabella to take them away, fell into the profoundest sadness, and bethought them of the desperate remedy of attempting to starve the Spaniards out, by not sowing or planting anything. But this is a shallow device, when undertaken on the part of the greater number, in any country, against the smaller. The scheme reacted upon themselves. They had intended to gain a secure though scanty sustenance in the forests and upon the mountains; but though the Spaniards suffered bitterly from famine, they were only driven by it to further pursuit and

molestation of the Indians, who died in great numbers, of hunger, sickness and misery.

About this period there arrived in the Indies from the Court of Spain a Commissioner of Inquiry, his mission being doubtless occasioned by the various complaints made against the admiral by Father Buil, Margarite, and the Spaniards who had returned from Hispaniola. The name of this commissioner was Juan Aguado, and his powers were vouched for by the following letter from the sovereigns:

“The King and the Queen.

“Cavaliers, esquires and other persons, who by our command are in the Indies; we send you thither Juan Aguado, our Gentleman of the Chamber, who will speak to you on our part: we command that you give him faith and credence.

“I the King: I the Queen.

“By command of the King and Queen, our Lords.

“Hernand Alvarez.

“Madrid, the ninth of April, one thousand four hundred and ninety-five.”

Columbus drew much inspiration from the travels of Marco Polo and of Sir John de Mandeville and it may interest the reader to have a specimen of the narrations of the latter.

RELICS OF CHRISTOPHER COLUMBUS.

There is to be a reproduction of the Convent of La Rabida where Columbus and his little boy Diego were hospitably received when he came to Spain from

Portugal and whose excellent friar proved to be the real maker of Columbus' fortunes.

The caravel Santa Maria will be present in model so that the elementary school history will be less barren to those who memorize the fact that the fleet of Columbus consisted of the Nina, the Pinta and the Santa Maria.

As Columbus is to be canonized at Genoa during the year 1892, the various objects of interest pertaining to the occasion will be presented to the visitor to Chicago.

SIR JOHN DE MANDEVILLE'S TRAVELS.

THE LAND OF LAMANY.

LAMANY.

From that country go men by the sea ocean and by many diverse isles and by many countries that were too long to tell of. And at fifty-two journeys from this land that I have spoken of there is another land that is full great that men call Lamany. In that land is full great heat, and the custom there is such that

RELIGIOUS BELIEF

men and women go all naked. And they scorn when they see any strange folk going clothed, and they say that God made Adam and Eve all naked; and that no man should shame that is of like nature. And they say that they that be clothed, be folk of another world, or they be folk that believe not in the God and they



THE COLUMBUS STATUE.

(The only bronze statue of Columbus in America.)



say that they believe in God that formed the world and that made Adam and Eve and all other things.

LAND TENURE.

And also all the land is common ; for all that a man holdeth one year, another man hath it another year, and every man taketh what part that him liketh. And also all the goods of the land be common, corn and all other things ; for nothing is kept in close, nor anything there is under lock ; and every man there taketh what he will without any contradiction : and one man there is as rich as another.

CANNIBALISM.

But in that country is a cursed custom, for they eat more gladly men's flesh than any other flesh ; and yet is that country abounding in flesh, fish, corns, gold, silver and all other goods.

SALE OF CHILDREN.

Thither go merchants and bring with them children to sell those of the country, and these buy them : and if they be in fat, they eat them anon ; and if they be lean, they feed them till they be fat, and then they eat them ; and they say that it is the best flesh and the sweetest of all the world.

THE ANTARTIC STAR AND LODE-STAR.

In that land and in many others beyond that, no man may see the star transmontaine that is called the

star of the sea that is immovable and that is toward the north, that we call the lode-star. But men see another star contrary to it that is toward the south, that is called the antarctic. And right as the shipmen take their advise here and govern themselves by the lode star, right so do shipmen beyond the parts, by the star of the south the which star appeareth not to us, and this star which is toward the north that we call the lode star appeareth not to them. For which cause men may well perceive that the land and the sea be of round shape and form; for the part of the firmament showeth in one country that showeth not in another country. And men may well prove by experience and subtle compassment of wit that if a man found passages by ships that would go to search the world, and above and beneath.

The which thing I prove thus after that I have seen; for I have been towards the parts of Brabant, and beheld by the astrolobe that the star that is called the transmontaine is 53° high. And more, for there in almayne and Bavaria it hath 58° and move forth toward the parts septentrional it is 62° of height, and certain minutes. For I, myself, have measured it by the astrolobe. Now shall you know that against the Transmontaine is the other star that is called antarctic, as I have said before, and the two stars do not move any nearer. And by them turn all the firmament right as doth a wheel that turneth by its axletree, so that those stars bear the firmament in two equal parts, so that it hath as much above as beneath. After this I have gone towards the parts meridional, that is toward the south: and I have found that in Libya men see first the star antarctic. And so far have I gone more forth

in the countries, that I have found that star move high ; so that toward the high Libya it is 18° of height and certain minutes (of the which sixty minutes make a degree). After going by sea and by land toward this country, of which I have spoken, and to other isles and lands beyond that country, I have found the star antarctic of 33° of height and more minutes. And if I had had company and shipping for to go more beyond, I trow well in certain that we should have seen the roundness of the firmament all about.

FIRMAMENT BETWEEN STARS.

For as I have told you before, the half of the firmament is between those two stars the which half I have seen and of the other half, I have seen toward the north, under the Transmontaine $62^{\circ} 10'$; and toward the part meridional, I have seen under the antarctic $33^{\circ} 16'$: thus the half of the firmament in all holdeth but 180° . And of those 180° I have seen 62° on that one part, and 33° on that other part, that be 95° and nigh the half of a degree ; and so there lacked of my seeing all of the firmament but 84° and the half of a degree : and that is not the fourth part of the firmament. For the four parts of the roundness of the firmament hold 90° , so there faileth but five degrees and a half of the fourth part. And also I have seen the three parts of all the roundness of the firmament and more yet, 5° and a half.

FEET AGAINST FEET.

By the which I tell you certainly that men may environ all the earth of all the world, as well under as

above, and turn again to their own country, that had company, and shipping, and guidance; and always he should find men, lands and isles, as well as in this country. For yet wit well that they that be toward the antarctic, they be straight feet against feet of them that dwell under the transmontaine; as well as we and they that dwell under us, be feet against feet.

MEN GO UPWARDS ALWAYS.

For all the parts of sea and of land have their opposites; habitables or trespassables, and they of this half and of the beyond half. And not yet well that after that I may perceive and comprehend that the lands of Prester John, Emperor of India, be under us; for in going from Scotland or from England toward Jerusalem, men go upwards always. For our land is in the low part of the earth toward the west, and the land of Prester John is the low part of the earth toward the east; and they have there the day when we have the night, and also high to the contrary they have the night when we have the day.

JERUSALEM IN THE MIDST OF THE WORLD.

• For the earth and the sea be of round form and shape, as I have said before; and that men go upwards to one coast, and downward to another coast. Also ye have heard me say that Jerusalem is in the midst of the world, and that may men drove and show there by a sphere that is fixed in the earth upon the hour of mid-day, when it is equinoxium, that showeth no shadow on any side. And that it

should be in the midst of the world, David witnesseth in the Psalter, where he saith *Deus operatus est salute in media terra*. Then they that depart for the parts of the west for to go toward Jerusalem, as many journeys as the go upward for to go thither, in as many journeys may they go from Jerusalem unto other confines of the superficiality of the earth beyond those towards India and to the foreign isles, all is environing the roundness of the earth and of the sea, under our countries on this half. And therefore hath it befallen many times of one thing that I have heard recounted while I was gone: how a worthy man departed once from our country for to go search the world.

INDIA.

And so he passed India and the isles beyond India where be more than five hundred isles; and so long he went by sea and land and so environed the world by many seasons that he found an isle where he heard them speak his own language, calling on oxen in the plough such words as men speak to beasts in his own country, whereof he had great marvel; for he knew not how it might be. But I say that he had gone so long by land and sea that he had environed all the earth, that he was come again environing, that is to say going about to his own marches, if he had passed forth until he had found his own country and his own knowledge. But he turned again from thence whence he was come from; and so he lost much painful labors as himself said a great while after that he was come home.

TEMPESTS OF THE SEA.

For it befell after that he went into Norway, and there tempest of the sea took him; and he arrived in an isle and when he was in that isle he knew well that it was the isle where he had heard them speak his own language before, and the calling of the oxen at the plough, and that was a possible thing.

MEN GO UNDER THE EARTH.

But how it seems to simple men, unlearned, that men may not go under the earth, and also that men should fall toward the heaven from under. But that may not be unless we fall toward heaven from the earth where we be; for from what part of the earth that men dwell on the above, or on the beneath, it seemeth always to them that dwell, that they go more right than any other folk. And right as it seemeth to us that they be under us, right so it seemeth to them that we be under them. For if a man might fall from the earth into the firmament, by greater reason the earth and the sea, that be so great and so heavy, should fall to the firmament; but that may not be, and therefore sayeth our Lord God, *Non timeas me qui suspendi terrans ex nihilo*; and albeit it be a possible

INTRICACIES OF PASSAGES,

thing that men may so environ all the world, nevertheless of a thousand persons one might not happen to return to his country. For, for the greatness of the earth and of the sea, men may go by a thousand and a

thousand other ways that no man could return himself perfectly toward the parts that he come from, but if it were by adventure and hap, or by the grace of God. For the earth is full large and full great and holds in roundness and environs about by above and beneath twenty thousand four hundred and twenty-five miles, after the opinion of the wise old astronomers. And their sayings I do not reprove. But after my little wit, it seemeth to me saving their reverence, that it is more. And for to have a better understanding, I say thus: Be there imagined a figure that hath a great compass, and about the point of the great compass that is called the centre be made another little compass; then afterwards be the great compass divided by lines in many parts, and that all the lines meet at the centre, so that in as many parts as the great compass shall be divided in so many shall be parted the little one that is about the centre: albeit that the spaces be less. Now then be the great compass represented for the firmament and the little compass represented for the earth.

Now then the firmament is devised by astronomers in twelve signs, and every sign is devised in thirty degrees, that is three hundred and sixty degrees that the firmament hath above.

EXTENT OF THE EARTH.

Also be the earth devised in as many parts as the firmament, and let every part answer to a degree of the firmament, and wit thee well that after the authors of astronomy seven hundred furlongs of earth answer to a degree of the firmament, and those be eighty-seven miles and four furlongs now be that here

multiplied by three hundred and sixty sithes, and then there be thirty-one thousand, five hundred miles, each of eight furlongs after the miles of our country. So much hath the earth in roundness, and of besight environ, after my opinion and my understanding. And ye shall understand that after the opinion of old wise philosophers and astronomers, our country or Wales, or Ireland, or Scotland, or Norway, or the other isles coasting to them, be not in the superficiality counted above the earth; as it showeth by all the books of astronomy.

SEVEN PARTS FOR SEVEN PLANETS.

For the superficiality of the earth is distributed into seven parts for the seven planets, and those parts are called climates. And our parts be not of the seven climates, for they be descending toward the west, and also these isles of India which be not reckoned in the climates, for they be against us that be in the low country, and the seven climates stretch them environing the world.

THE LAND OF THE AMAZONS.

Beside the land of Chaldee in the Land of Amazon and within that realm all are women and there are no men: not as some men say that men may not live there but for because the women will suffer no men amongst them to be their sovereigns. For once there was a king in that country and men married as in other countries; and it so befell that the king had war with the men

of Scythia, the which king was hight Colopeus that was slain in battle and all the good blood of his realm.

MASSACRE OF THE MEN.

And when the queen and all the other noble ladies saw that they were all widows and that all the royal blood was lost, they armed them and as creatures out of wit they slew all the men of the country that were left. For they would that all the women were widows as the queen and they were. And from that time hitherto they never would suffer man to dwell amongst them longer than seven days and seven nights; nor that any child that was male should dwell amongst them longer than he was being nourished; and then sent to his father. And if it be a female they do away with one breast with a hot iron, and if it be a woman of great lineage they do away with the left breast that she may the better bear a shield; and if it be a woman of simple blood, they do away the right breast for to shoot turkies with a bow: for they shoot well with bows.

THE QUEEN IS CHIEF RULER.

In that land they have a queen that governs all that land, and they all be obeissant to her. And always they make her queen by election that is most worthy in arms. For they be right good warriors, and wise, noble, and worthy. And they go oftentimes to the help of other kings in their wars, for gold and silver as other Soudaners do: and they maintain themselves right vigorously.

The land of Amazon is an isle all environed with the sea save in two places where be two entrances.

BALSAM.

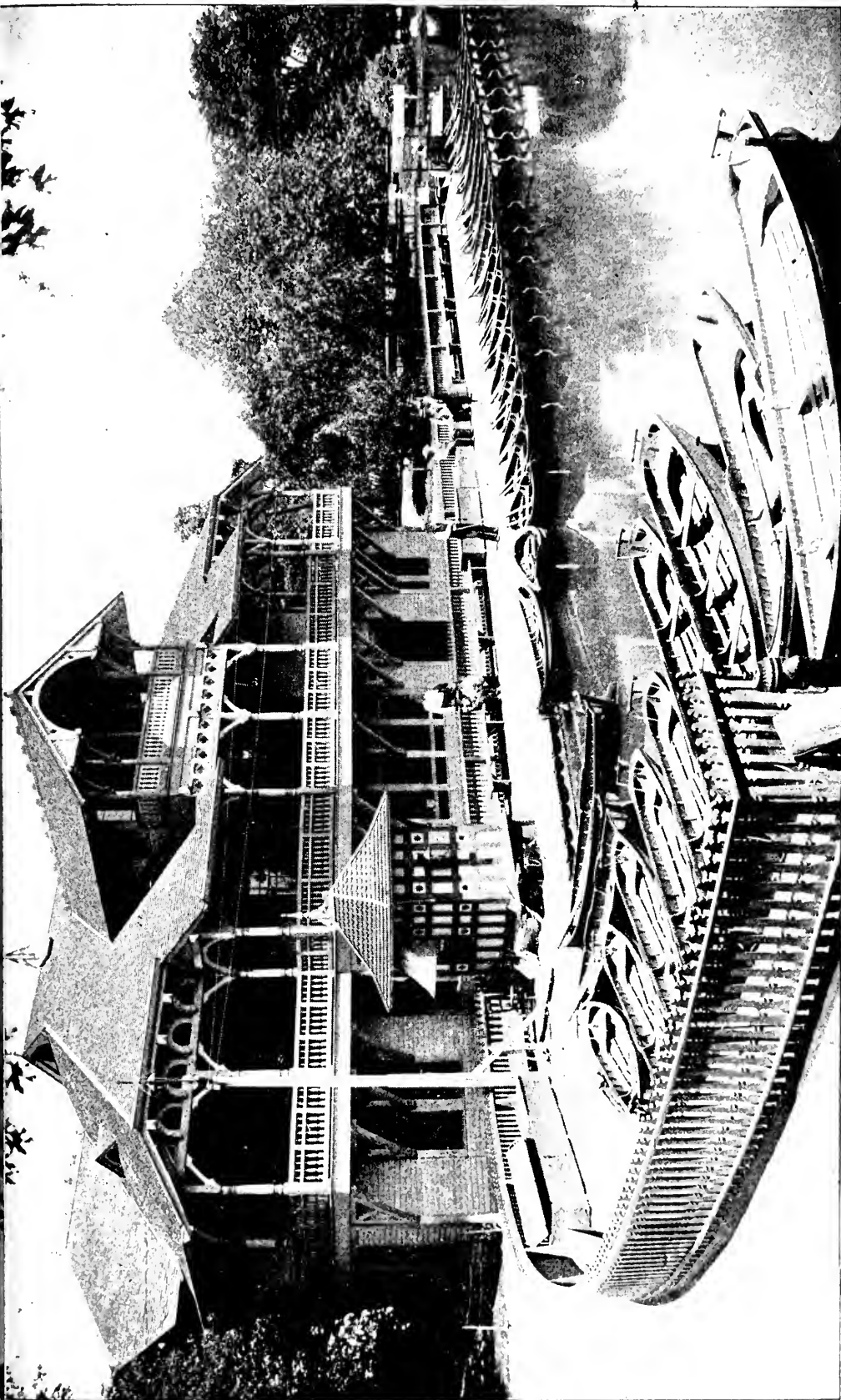
APPLES OF PARADISE.

Also in that country and in others also men find long apples to sell and men call them apples of Paradise; and they be right sweet and of good savor. And though ye cut them in never so many gobbets or parts, overthwart or endlongs, evermore ye shall find in the midst the figure of the holy cross of our Lord Jesus. But they will rot within eight days, and from that cause men may not carry off the apples to any far countries. And they have great leaves of a foot and a half in length, and they are convenably large. And men find there also the apple-tree of Adam, that has a light at one of the sides.

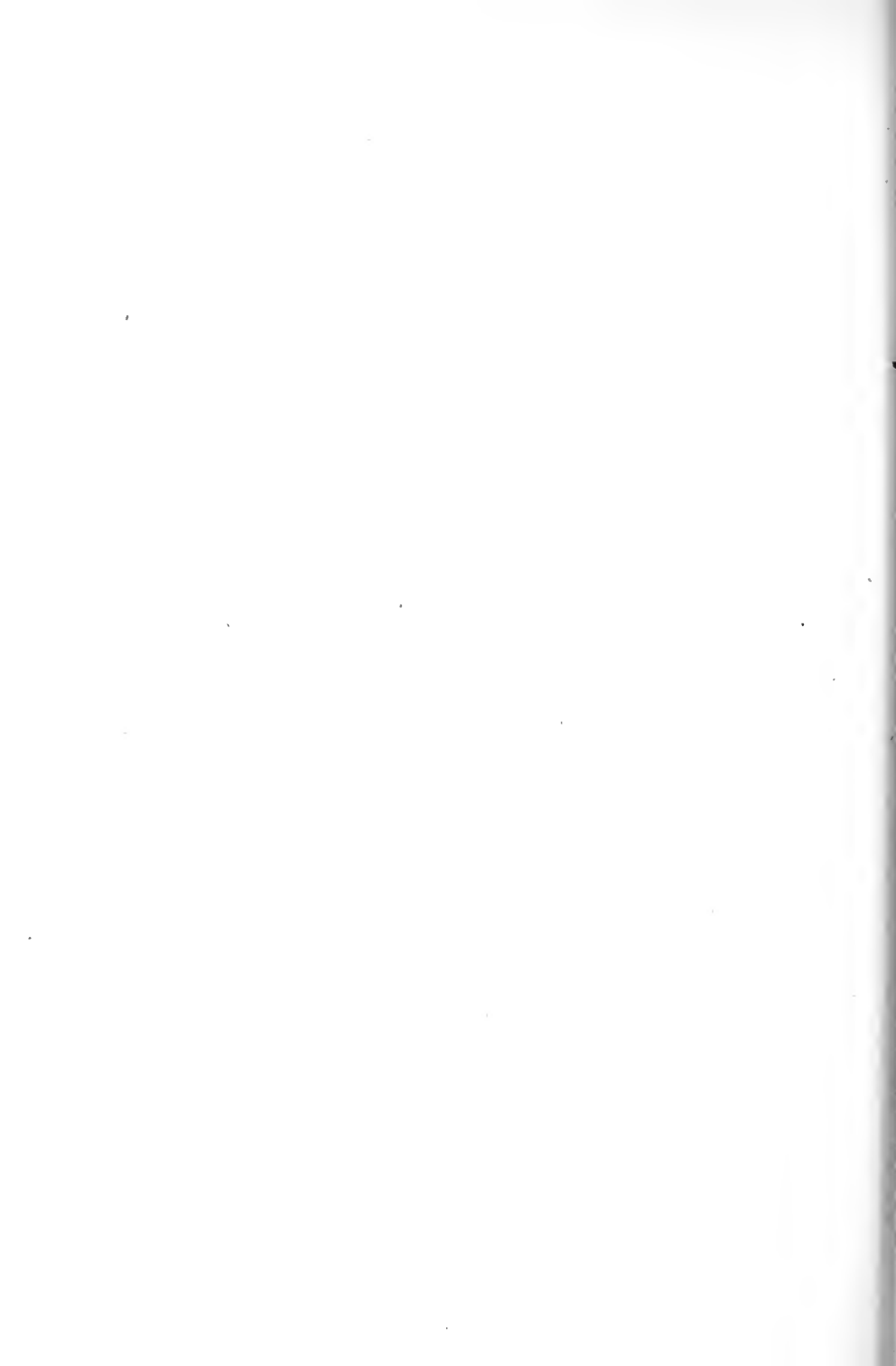
And there be also fig trees that bear no leaves, but figs upon the small branches: and men call them figs of Pharaoh. Also beside Cairo without that city is the field where balm groweth: and it cometh out in small trees that be no higher than a man's breech girdle: and they seem as wood that is of the wild vine.

SEVEN WELLS OF JESUS CHRIST.

And in that field be seven wells that our Lord Jesus Christ made with his feet when he went to play with



BOAT-HOUSE, LINCOLN PARK



other children. That field is not so well closed but that men may enter at their own list.

THE BALM.

But in that season that the balm is growing, men put these to good keeping that no man dare be so hardy as to enter. This balm groweth in no place but only there. And though that men bring of the plants for to plant in other countries, they grow well and fair, but they bring forth no fructuous thing: and the leaves of balm let fall nothing.

AND MEN CUT THE BRANCHES.

And men cut the branches with a sharp flintstone when men will go to cut them: for whoso cutteth them with iron, it would destroy his virtue and his nature. And the Saracens call the wood Enouch Valse, and the fruit which is as suybybes they call abibissam, and the liquor that droppeth from the branches they call guybalse. And some make always that balm to be tilled by the christian men, or else it would not fructify, as the Saracens say themselves; for it hath been oftentimes proved. Men say also that the balm's growth in India the more in that desert where the trees of the sun and of the moon spake to Alexander.

SUBSTITUTES FOR BALM.

But I have not seen it, for I have not been so far above upward, because that there be too many perilous passages. And wit ye well that a man ought to take

good keep for to buy balm, unless he comes to know it right well, for he may right lightly be deceived. For men sell a gum that men call turpentine instead of balm; and they put thereto a little balm for to give good odor. And some put wax in oil of the wood of the fruit of balm and say that is balm; and some distil leaves of Gylosre and of Spikenard of Spain, and of other spices that be well smelling; and the liquor that goeth not thereof they call it balm; and they ween that they have balm when they have none. For the Saracens counterfeit it by subtlety of craft, for to deceive Christian men as I have seen full many a time. And after them the merchants and the apothecaries counterfeit it often and then it is less worth and a great deal worse.

ATTRIBUTES OF PURE BALM.

But if it like you I shall show how ye shall know and prove to the end that ye shall not be received. First ye shall well know that the natural balm is full clean and of citron color and strong smelling. And if it be thick or red or black it is sophistocated, that is to say counterfeit and made like it for deceit. And understand that if ye will put a little balm into the palm of your hand against the sun, if it be fine and good ye shall not suffer your hand against the heat of the sun. Also take a little balm with the point of a knife and touch it to the fire and if it burn it is a good sign. Afterwards take also a drop of balm and put it into a dish or in a cup with milk of a goat, and if it be natural balm, anon it will take and beclip the milk. Or put a drop of balm in clear water in a cup of silver or in a

clean basin and stir it well with the clean water ; and if the balm be fine and of his own kind, the water shall never trouble ; and if the water be sophistocated, that is to say counterfeit, the water shall become anon troubled. And also if the balm be fine it shall fall to the bottom of the vessel as though it were quicksilver. For the fine balm is more heavy, twice, than is the balm that is sophistocated and counterfeit.

OF THE CROSSE AND CROWNE OF OURE LORD JESU
CRIST.

THE CROSSE OF OUR LORD.

At Constantynoble is the Cros of our Lord Jesu Crist, and the Cotte withouten Semes, that is clept *Tunica inconsutilis*, and Spounge, and the Reed, of the which the Jewes zaven oure Lord Eyselle and Galle, in the Cros. And there is one of the Nayles, that Crist was naylled with on the Cros. And some Men trowen, that half the Cros, that Crist was don on, be in Cipres, in an Abbey of Monkes, that Men callen the Hille of the Holy Cros ; but it is not so ; For that Cros, that is in Cipre, is the Cros, in the whiche Dysmas the gode Theof was hanged onne. But alle Men knowen not that ; and that is evylle y don. For profyte of the Offrefnge, thei seye, that is the Cros of oure Lord Jesu Crist. And zee schulle undrestande, that the Cros of oure Lord was made of 4 manere of Trees, as it is conteyned in this Vers. *In Cruce fit Palma Cedrus, Cepressus Oliva.*

MATERIALS OF THE TRUE CROSSE.

For that Pece, that wente upright fro the Erthe to

the Heven, was of Cypresse; and the Pece that went overthwart, to the whiche his Handes weren nayled, was of Palme; and the Stock that stode within the Erthe, in the which was made the Marteys, was of Cedre; and the Table aboven his Heaved that was a Fote and an half long, on the whiche the Title was writen, in Ebrew, Grece and Latyn, that was of Olyve. And the Jewes maden the Cros of theise 4 manere of Trees; For thei trowed that oure Lord Jesu Crist scholde have hanged on the Cros also longe as the Cros mygthen laste. And therfore made thei the Foot of the Cros of Cedre. For Cedre may not in Erthe ne in watre rote. And therefore the wolde that it scholde have lasted longe. For thei trowed that the Body of Crist sholde have stunken; therfore thei made that pece that went from the Erthe upward of Cypres; For it is well smellynge; so that the smeles of his Body scholde not greve Men that wenten for by. And the overthwart Pece was of Palme: For in the Olde Testament it was ordyned that whan on overcomen he shoulde be crowned with Palme; and for thei trowed that thei hadden the Victorie of Crist Jesus, therefore made thie the overthwart Pece of Palme. And the Table of the Tytle thie maden of olyve; for olyve betokeneth Pes. And the storrye of noe wytnesseth whare that the Culver broughte the Braunche of olyve that betokened Pes made betweene God and Man.

THE CRUCIFIXION.

And so trowed the Jewes for to have Pes whan Crist was ded. For thei sayd that he made Discord

and strif amonges hem. And zee schulle undirstande that oure Lord was y naylled on the cros lyggyng; and therfore he suffered the more payne and the cristene men that dwellen beyond the see, in Greece, seyn that the Tree of the cros that we callen Cypresse was of that Tree that Adam ete the appulle was of; and that fynde thie writen.

SETH AND THE AUNGELLE.

And thei seyn also that here scripture seythe that Adam was seek, and seyed to his sone Sethe that he scholde go to the aungelle that keppe Paradys that he wolde senden hym Oyle of Mercy for to anoynte with his Members that he myghte have hele. And Sethe wente. But the aungelle wolde not late him come in; but seyde to him that he myghte not have of the Oyle of Mercy. But he toke him three Greynes of the same Tree that his Fadre eet the appelle offe; and bad him, als sone as his Fadre was ded, that he scholde putte theise three Greynes undre his Tonge, and grave him so: and he dide. And of theise three Greynes sprang a Tree, as the aungelle seyde that it scholde, and bere a Fruyt thorge the whiche Fruyt Adam sholde be saved. And when Sethe cam azen he fonde his Fadre nere ded. And when he was ded, he did with the Greynes as the aungelle bad him; of the whiche sprongen three Trees, of the whiche the cros was made that bare gode Fruyt and blessed, our Lord Jesu Crist; thorge whom Adam and alle that comen of him, scholde be saved and delyvered from Drede of Dethe withouten ende, but it be here own defaulte.

THE MOUNT OF CALVARIE.

This holy Cros had the Jewes hydde in the Erthe undre a Roche of the Mount of Calvarie; and it lay there 200 Yeer and more, into the Tyme that Seynt Elyne, that was Modre to Constantyn the Emperour of Rome. And sehe was Daughtre of Kyng Cool, born in Colchestre, that was Kyng of England that was clept thanne Brytanne the more; the whiche the Emperour Constance wedded to his wyf for here Beutee, and gat upon hire Constantyn, that was after Emperour of Rome.

THE CROWN OF THORNS.

And zee schulle undirstande that the Cros of our Lord was eyght Cubytes long, and the overthwart Pece was of lengthe three Cubytes and an half. And a partie of the Crowne of oure Lord wherwith he was crowned, and one of the Nayles, and the Spere Head, and many other Reliques ben in France in the Kinges Chapelle. And the Crowne lythe in a Vesselle of Cristalle richely dyghte. For a King of France boughte theise Relikes somtyme of the Jewes; to whom the Emperour had leyde hem to wedde, for a gret Summe of Syllore. And zif alle it be so that Men seyn, that this crowne is of Thornes, zee schulle undirstande that it was of Jonkes of the See, that is to say, Rushes of the See, that prykken als scharpely as Thornes. For I have seen and beholden many tymes that of Pangs and that of Constantynoble: For thei were bothe on made of Russches of the See. But Men have

departed hens in two Parties: of the whiche a Part is at Parys, and the other Part is at Constantynoble.

And I have one of the precyous Thornes that semethe lieke a white Thorn; and that was goven unto me for gret specyaltee. For there are many of hem broken and fallen into the Vesselle that the Crowne lythe in: For thei breken for dryenesse when man meven herin to schewen hem to grete Lords that comen thidre.

HE WAS YLED INTO A GARDEN.

And zee schulle undirstande that oure Lord Jesu in that nyghte that he was taken he was yled into a garden; and there he was first exayned righte scharply, and there the Jewes scorned him, and maden him a crowne of the Braunches of Albespyne, that is White Thorn, that grew in that same Gardyn, and setten on his Heved so fast and so sore that the Blood ran down be many places of his Visage, and of his Necke, and of his schuldres and therefore hath White Thorn many Vertues; For he that berehe a Braunche on him thereoffe, no Thunder ne no Maner of Tempest may dere him; ne in the Hours that is inne may non evylle Gost entre ne come unto the place that is inne. And in that same Gardyn, Seynt Petre denyed oure Lord thryse.

CHRIST BEFORE THE BISSCHOPPES.

Afterwards was oure Lord led before the Bisschoppes, and the Maystres of the Lawe, into another Gardyn of Anne; and there also he was examyned, reprevd, and

scorned, and crowned eft with a white Thorn that men clepethe Barbaryanes, that grew in that Gardyn, and that hathe also many Vertues. And afterward he was led into a Gardyn of Cayphas, and there he was crowned with Eglientier.

CHRIST BEFORE PILATE.

And aftre he was led into the Chambre of Pylate, and there he was examined and crowned. And the Jewes setten him in a chayere and cladde him in a Mantelle; and there made thei crowne of Jonkes of the See; and there thei kneled to him, and skorned him, seyenge, *ave, Rex Judeorum*, that is to seye, *Heyl, Kyng of Jewes*. And of this crowne half is at Parys and the other half at Constantynoble; and this crown had Crist on his Head when he was don on the cros; and therefore oughte men to worschipe it and holde it more worthie than any of the othere.

And the Spere Shaft hathe the Emperour of Almayne; but the Head is at Parys. And natheles the Emperour of Constanynoble sayethe that he hathe the Spere Head; and I have oftentyme seen it, but it is gretter than that at Parys.

THE THEORIES OF COLUMBUS.

His theory was, that the earth was not a perfect sphere, but pear-shaped; and he thought that as he proceeded westward in this voyage, the sea went grad-

ually rising and the ships rising too until they came nearer to the heavens. It is very possible that this theory had been long in his mind, or, at any rate, that he held it before he reached the coast of Paria. When there, new facts struck his mind, and were combined with his theory. He found the temperature much more moderate than might have been expected so near the equinoctical line, far more moderate than on the opposite coast of Africa. In the evenings, indeed, it was necessary for him to wear an outer garment of fur. Then, the natives were lighter colored, more astute, and braver than those of the islands. Their hair, too, was different.

Then, again, he meditated upon the immense volume of fresh waters which descended into the Gulf of Paria. And, in fine, the conclusion which his pious mind came to, was that when he reached the land which he called the land of Gracia, he was at the base of the earthly Paradise. He also upon reflection, concluded that it was a continent which he had discovered, the same continent of the east which he had always been in search of; and that the waters we know now to be a branch of the river Orinoco, formed one of the great rivers which descended from the garden of Paradise.

COLUMBUS AND REPARTIMIENTOS.

The admiral gave repartimientos to those followers of Roldan who chose to stay in the island, which were constituted in the following manner: The admiral placed under a cacique so many thousand matas (shoots of the cazabi) or, which came to the same thing, so many thousand montones (small mounds a foot and a half

high, and ten or twelve feet round, on each of which a cazabi shoot was planted) and Columbus then ordered that the cacique or his people should till these lands for whomsoever they were assigned to. The repartimiento had now grown to its second state—not lands only, but lands and the tillage of them. We shall yet find that there is a further step in this matter, before the repartimiento assumes its utmost development. It seems, too, that in addition to these repartimientos, Columbus gave slaves to those partizans of Roldan who stayed on the island. Others of Roldan's followers, fifteen in number, chose to return to Spain; they received a certain number of slaves, some one, some two, some three, and the admiral sent them home in two vessels which left the port of St. Domingo at the beginning of October, 1499.

ISABELLA DECLINES TO REINSTATE COLUMBUS.

Isabella replied in a very sensible speech, telling him that, while she fully appreciated his services, and knew the rancor of his enemies, she was afraid he had given cause for complaint. "Common report," she said, "accuses you of acting with a degree of severity quite unsuitable for an infant colony and likely to excite rebellion there. But the matter as to which I find it hardest to give you my pardon, is your conduct in reducing to slavery a number of Indians who had done nothing to deserve such a fate. This was contrary to my express orders. As your ill fortune willed it, just at the time when I heard of this breach of my instructions, everybody was complaining of you, and no one spoke a word in your favor. And I felt obliged to send

to the Indies a commissioner to investigate matters, and give me a true report; and, if necessary, to put limits to the authority which you were accused of overstepping. If you were found guilty of the charges he was to relieve you of the government and to send you to Spain to give an account of your stewardship. This was the extent of his commission. I find that I have made a bad choice in my agent; and I will take care to make an example of Bobadilla, which shall serve as a warning to others not to exceed their powers. I cannot, however, promise to reinstate you at once in your government. People are too much inflamed against you, and must have time to cool. As to your rank of admiral, I never intended to deprive you of it. But you must bide your time and trust in me."

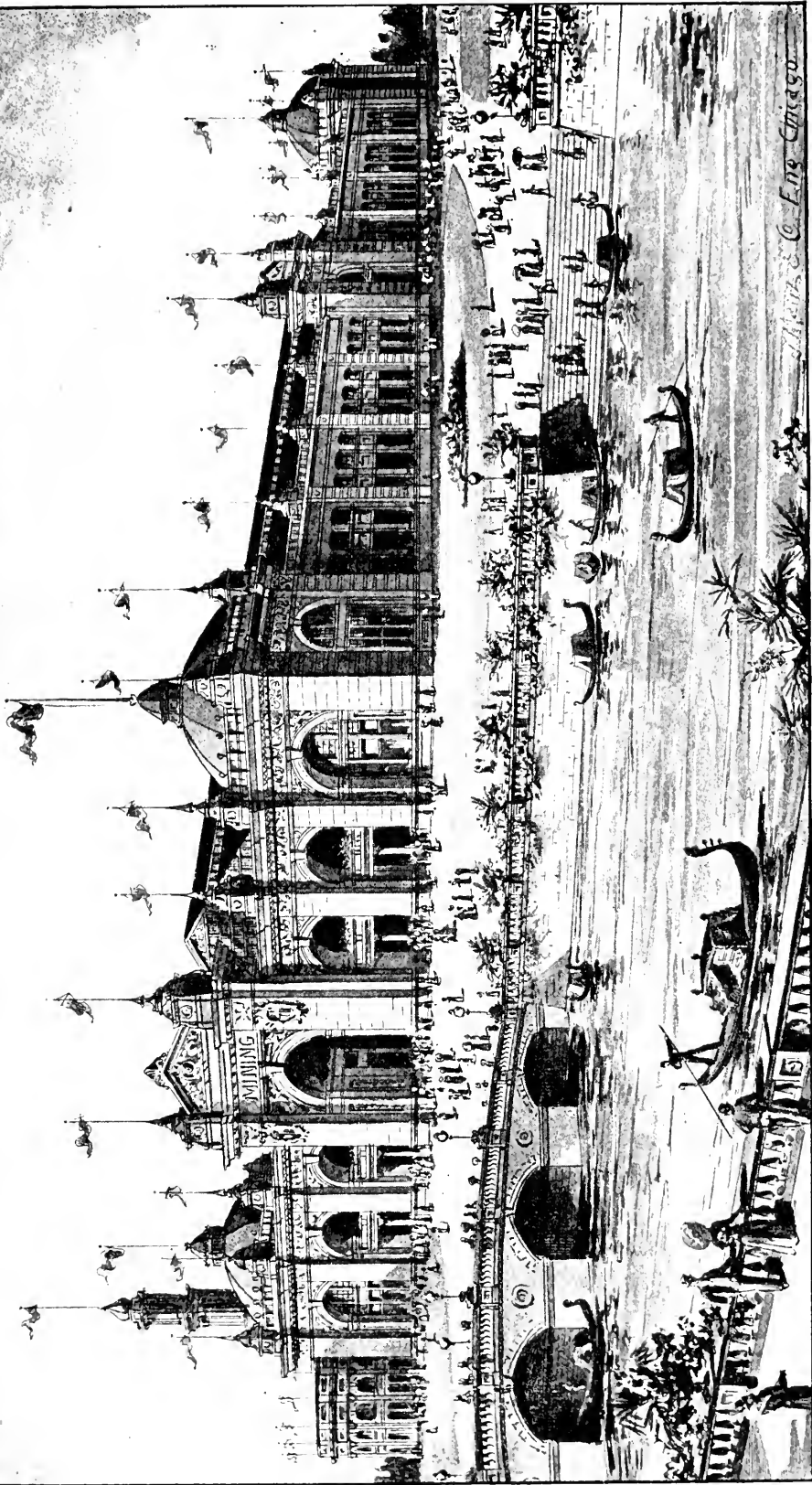
THE HISTORY OF CHICAGO.

THE PIONEER PERIOD.

The names of Father Marquette, Joliet, and La Salle are imperishably connected with what, once known as the Louisiana Territory, is now divided into States each in itself an empire. Father Marquette's words in undertaking his mission in America and more particularly among the Illinois, now seem prophetic: "I found myself under the happy necessity of exposing my life for the salvation of all these nations, and particularly of the Illinois;" for though the nomadic Indian has given place to the Caucasian, yet have there been evoked such free-will offerings in the name of God, and for the uplifting of the merely animal man, that the churches and charities, and missions at Chicago may well be regarded as a fuller development of the labors undertaken by the good Marquette.

Joliet and La Salle were traders and sought to lay the foundations for purely commercial prosperity; that Chicago the modern city has been worthy of the legacy bequeathed it by the French, the returns of transportation and manufacture abundantly testify. It was in 1682 that La Salle entered the Chicago river, and the history of the city's growth as already presented sufficiently vindicates the event as truly historical. Ten years earlier Father Marquette, while engaged in his pious labors, found himself so broken in health as to pass the winter in meditation and prayer where now is heard the roar of Chicago's streams of commerce.

La Salle calls what we now know as Chicago, Checangau, but there have been other and fanciful



MINING BUILDING.

W. H. H. & Co. Eng. Chicago



derivations of a name which properly signifies the great, or strong.

In 1812 the original Fort Dearborn was the scene of an Indian massacre, but nine years later United States commissioners consisting of persons no less distinguished than Lewis Cass the statesman, and Henry Schoolcraft the historian of the Indian Tribes, were appointed to meet in Chicago and extinguish the title of the natives. This was done and in 1833 the aborigines were removed to the Indian Territory.

The earliest settlement seems to have been made by a San Domingo runaway slave named Baptiste Point De Saible who is known to have had a hut where now Chicago stands as early as 1779. Regarded in the light of subsequent history this fact would seem to have foreshadowed Chicago's recognized office as a harbor for all who are oppressed, nationality or color being no disqualification. De Saible's hut in 1804 had become the property of John H. Kinzie — the earliest white settler of Chicago. It was possibly owing to a difficulty between Kinzie and an Indian in which the latter lost his life, that there occurred the massacre at Fort Dearborn, August 15, 1812. In 1816 he built what is known as the Kinzie House. The Indian treaty of 1821 is supposed to have been concluded in the immediate vicinity of Mr. Kinzie's house, which stood on the north bank of the River.

The original Fort Dearborn was erected in 1803, stood on the south side of the Chicago river near to its mouth, and there in 1812 took place the massacre of the garrison while on its march and the destruction of the fort. In 1816 the fort was rebuilt and continued to be occupied for the next twenty years.

THE LAND CRAZE.

As if to emphasize the truth of the statement that Chicago may fairly be selected as an illustration of the process of evolution in America, there seems to have been no experience which the City by the Lake has not passed through in the brief space of fifty-five years. De Saible, the Daniel Boone of Illinois; John Kinzie, the representative of the French traders and the American Fur Company; Fathers Marquette and Allouez, the types of the most spiritually-minded of missionary priests: Fort Dearborn suggesting at once the colonial necessity for "sleep to lie down armed," and the perils constantly threatened by the Indian tribes: the portage at Chicago foreshadowing the future when "every wind that blows sends suitors to her court:" the incorporation as a town and its selection as a county seat, illustrating the American idea of local organization and self-government: and the speculative spirit which leads to "booms" and panics — these are some of the many youthful experiences of America and of the great western American city.

In 1834 the flood of immigration which followed upon the throwing open to white settlers what had been an Indian Territory, caused Chicago to present the appearance of a new mining camp when promising mines have been found by prospectors. Prices were determined by one's needs without the slightest reference to intrinsic values, and so hot was the fever that the "bucket shops" and "pool-rooms" were anticipated in the sale and purchase of lots which existed only upon paper. Land purchased from the United

States government at a dollar and a quarter an acre was promptly platted out into town lots and sold for as much as three hundred dollars a building lot, nor did distance from the town limits at all dampen the enthusiasm of those who mistook aspiration for inspiration. But with the panic of 1831 came the bursting of the bubble and the temporary abandonment of schemes for gaining sudden wealth which remind one of the times of George Law as described in Mackay's extraordinary popular delusions.

INCORPORATION AS A CITY.

In May, 1837, Chicago became an incorporated city and celebrated the event by a long-honored custom of creating a municipal debt; for the laboring man had to look to the canal for the means of earning his support, and speculation was for the time being out of the question. In 1841 was established the Young Men's Association, which under its more modern name of the Young Men's Christian Association, has been and continues to be so healthful and so powerful an influence in a city overflowing with young men restrained by no home associations. In the same year Chicago took the initiative step in the movement which has since sent millions of dollars for the relief of the misgoverned people of Ireland, and which has added to American citizenship many of the most patriotic and capable of her emigrants.

As early as 1843 Mormonism which later was to

create the flourishing settlements of Utah and to raise serious question as to the unlimited right to personal belief in matters of religion, was under discussion in Chicago.

In 1846 the chronicles are marked by mention of Chicago's active participation in the Mexican War and by the beginning of the undertaking of making Chicago a great railroad center, and by Chicago's being made a port of entry.

THE GREAT CHICAGO FIRE.

In October, 1871, the city which was then regarded as a prodigy of human achievement was substantially swept from the face of the earth and the destruction for a brief space of time promised to be as complete as that wrought by the Thirty Years' War.

Whether or not a mulish cow was the real incendiary still remains a subject of controversy, but certain it is that a fire ignited it matters not how in Mrs. O'Leary's barn, was to sweep as a besom of destruction over the proud city of Chicago. The site of the O'Leary barn was on DeKoven street about seven numbers from the western boundary of Jefferson street. It seems as a result of the most careful investigation that the fire had burned fully an hour before an alarm was sounded and that the flames were then beyond the control of the fire department, and the fire fiend seemed to rollick and revel in his unbridled career. The boundaries marking the scene of devastation are given that the visitor may more clearly appreciate how true it is that

Chicago has come forth from this ordeal of fire strengthened and rendered yet more beautiful. "Beginning at Jefferson and DeKoven streets, extending northerly to Harrison street, thence northeasterly to Clinton and VanBuren, thence east to Canal, again north to Adams, thence southerly along the river to Taylor street, thence west to Clinton, again south to DeKoven and finally west to Jefferson street." Such was the route on what is known as the West Side. On the South Side the fire began at "Taylor street and the river, swept east to Harrison, east to Wabash avenue, north to Congress, east to the lake, north to the mouth of the river, west to Taylor street and the river. It left standing only an elevator, the Lind block (bounded by Market, Randolph and Lake streets), and a Methodist church on Harrison street and Wabash avenue."

On the North Side the fire caught first near the mouth of the River, and spread west as far as Market street. Thence it passed north to Michigan street, west to the River, northwest to Division street, northeast to Division and Wesson, west to Division and Hawthorne avenue, east to Clybourn avenue, east again to Orchard street, northeast to Vine, north to Centre, east to Hurlbut, north to Belden avenue, northeast to Franklin, south to Clark, and to Wisconsin, east to the Lake and thence south to its starting point." The loss was estimated at \$186,000,000, the 13,500 buildings burned including business blocks, depots, warehouses, public buildings, hotels, theaters, churches, newspaper buildings, schools, together with their contents of raw or manufactured goods. Nearly one hundred thousand persons found themselves at once homeless and destitute, and the telegraph in carrying the news made the

silent appeal whose answer showed that the lesson of brotherly love had sunk deep into the hearts of Americans. In the confusion necessarily attendant upon a situation so distressing not all gifts were recorded, but sufficient is known to show a helpful sympathy which is one of the most legitimate boasts of the new civilization. But it must be borne in mind in order to read aright the lesson of the rebuilding of the city that the citizens of Chicago likewise brought into prominence the American peculiarity of accepting aid only till one can provide for himself, and that it is less the spacious limits and towering buildings which make Chicago a typical American city than its courage under the severest adversity and the daring of a spirit scarcely equalled by the poetic fancies of the great Christopher Marlowe.

INDICATIONS OF AMERICAN PROGRESS.

We have said that Chicago may well be studied as illustrating the methods and degree of America's advance.

In 1790 what is now the American Union possessed a population less than 4,000,000; in 1890 this had increased to nearly 63,000,000, or fifteen times the original number; in 1837 Chicago began its career as a city with a population of 4,170 and in 1890 this had increased to 1,099,133, or 263 times the original number.

In 1790 the territory occupied by the United States, was but an insignificant fraction of its present area;

in 1837 Chicago covered but ten or eleven miles, while now its area is 182 miles.

In 1890 the United States reports its exports at \$845,293,826 and its imports at \$789,222,228; in 1834. Chicago's entire trade is indicated by the assessor's valuation of \$236,432, while in 1890, \$1,380,000,000.

In 1790 the Indians were called upon to eke out the harvests of the colonists; in 1891 the crop as handled by Chicago was 177,353,461 bushels of grain, 4,358,058 barrels of flour while the live stock interests reached \$231,344,879, and the commerce \$1,380,000.

In 1790 the railroad was unknown, while in 1890 the mileage was reported at 161,255.08 of which Chicago was the western center.

In 1790 the United States was financially worse than bankrupt, while in 1890 the money in circulation amounted to \$1,502,891,123; in 1837 Chicago's valuation was \$236,842, and in 1890 \$4,093,145,904.

In 1790 the schoolhouse had hardly begun to appear; in 1890 there were 216,330 school buildings, 13,413,259 pupils, 352,231 teachers, and an expenditure was \$132,129,600. In 1837 Chicago had no schools; in 1890 its showing was 135,000 pupils in the public schools, 2,482 teachers, and an expenditure of \$3,787,222, while there were 1,127 private schools, with an enrollment of 62,000 pupils, and more than all, three flourishing universities.

In 1790 Harvard was little better than a pretentious grammar school; in 1890 colleges and universities are more plentiful than elementary schools were in 1790. The Chicago of 1837 had little need of the university, but the Chicago of 1890 has been active in securing as an auxiliary universities which in endowments

and promise rival the magnificent benefaction of Leland Stanford.

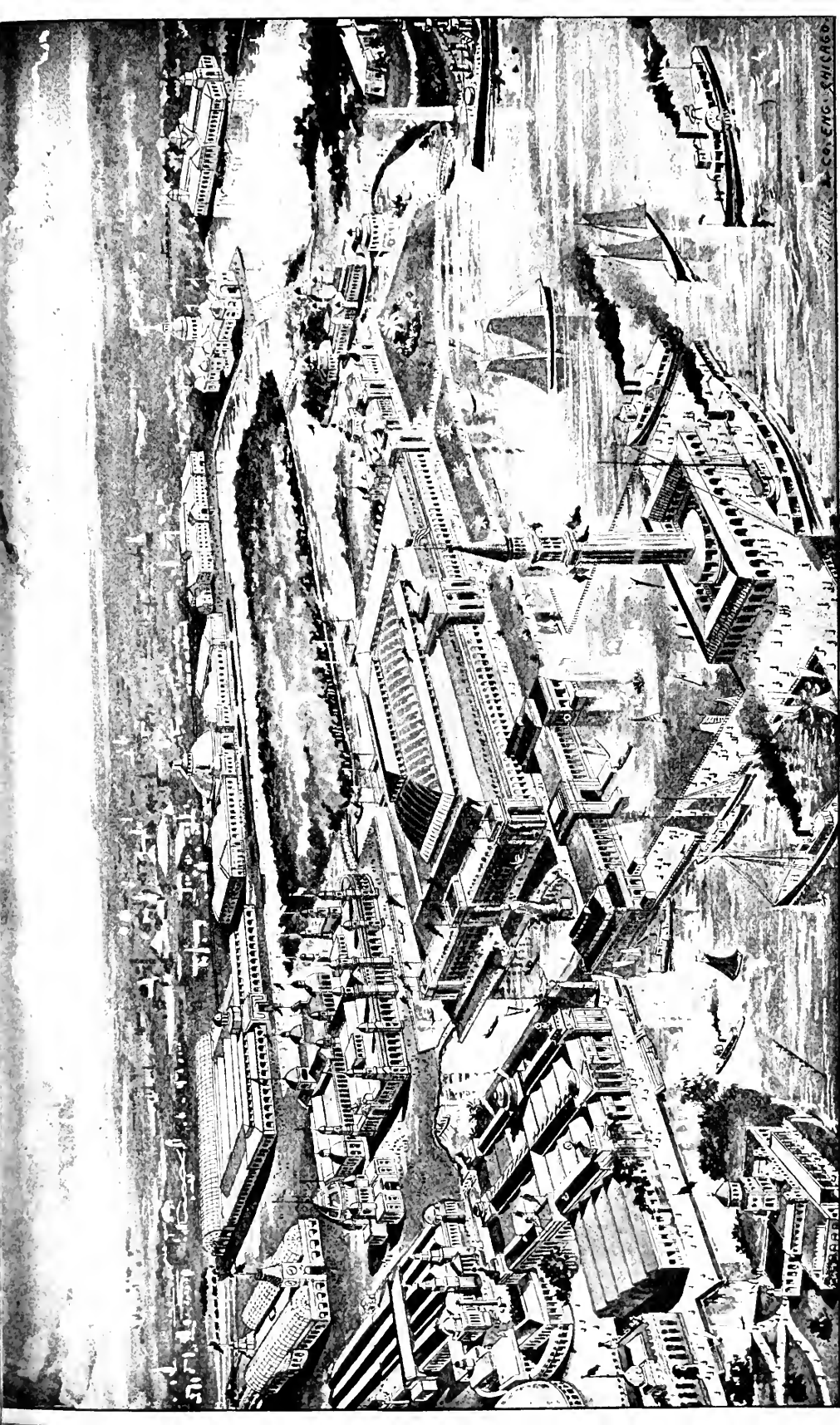
In 1790 the industries of the United States were few and paltry; in 1890 Chicago is known the world over through the gigantic enterprises of Potter Palmer, Armour, Swift, Pullman, Marshall Field, and "Old Hutch," and a manufactured product of \$96,300,000.

In 1790 the people were sufficiently occupied in securing for themselves religious freedom; in 1890 the prairie waste where was planted the Chicago of 1837 has blossomed into a city of magnificent churches — the legitimate harvest of the fertilizing influence of the early Jesuit missionary effort.

In 1790 the idea of the Brotherhood of Man had, after eighteen centuries, hardly penetrated the surface of æons of Pagan teaching; in 1890 the hospitals, homes, and similar provision for the helpless constitute in themselves a city within a city in Chicago.

In 1790 the few who were educated either had been sent abroad or else had been instructed by imported tutors; in 1890 the American universities included representatives from Japan and China — nations which in seeking an acquaintance with the movement of modern times carefully selected their points of observation. So, too, the education which in 1790 was the privilege of the few who found opportunity, is now the possession even of those who close their school life in the lower grades of the public schools.

In 1790 the political waters were so stormy as to require America's chosen sons as pilots. A hundred years later the pathways of the deep have become so familiar that we venture to intrust the guidance of the ship of state to any self-asserting politician who suc-



BIRD'S-EYE VIEW OF THE WORLD'S COLUMBIAN EXPOSITION AND GROUNDS.

WILLIAM A. COVING, CHICAGO.

cessfully scrambles for a seat in the public councils.

In 1790 we hear of New York, Boston, Philadelphia, Richmond, and Charleston; in 1890 the cities with a population of fifty thousand and more, — one-fortieth of the population of the United States in 1790, are: —

New York.....	1,513,501	Albany.....	94,640
Chicago.....	1,099,133	Columbus.....	90,398
Philadelphia.....	1,046,252	Syracuse.....	87,877
Brooklyn.....	804,377	New Haven.....	85,981
St. Louis.....	460,357	Worcester.....	84,536
Boston.....	446,507	Seranton.....	83,450
Baltimore.....	433,547	Toledo.....	82,652
San Francisco.....	297,990	Richmond.....	80,838
Cincinnati.....	296,309	Paterson.....	78,358
Cleveland.....	201,546	Lowell.....	77,605
Buffalo.....	254,457	Nashville.....	76,309
New Orleans.....	241,995	Fall River.....	74,351
Pittsburg.....	238,473	Cambridge.....	69,837
Washington.....	229,796	Atlanta.....	65,515
Detroit.....	205,669	Memphis.....	64,515
Milwaukee.....	204,150	Wilmington.....	61,437
Newark.....	181,518	Reading.....	58,926
Minneapolis.....	164,738	Dayton.....	58,568
Jersey City.....	163,987	Trenton.....	58,488
Louisville.....	161,005	Camden.....	58,274
Omaha.....	139,526	Evansville.....	56,674
Rochester.....	138,327	Lynn.....	55,684
St. Paul.....	133,156	Lincoln.....	55,491
Kansas City.....	132,416	Charleston.....	54,592
Providence.....	132,043	Hartford.....	53,182
Indianapolis.....	107,445	St. Joseph.....	52,811
Denver.....	106,670	Los Angeles.....	50,394
Allegheny.....	104,967	Des Moines.....	50,067

In 1790 even the library of Harvard University and of Yale College consisted of such books as the bene-

factions of Bishop Berkeley and of other lovers of their fellow-beings; in 1890 Chicago, having first in the American fashion accumulated sufficient means for satisfying material wants, is in the possession of such libraries as the Public library, the Newberry, and the Crerar.

In 1790 Art was almost an unmeaning word; in 1890 Chicago had over 60,000 visitors to its Art Institute while other collections invite the attention of those who find an interest in the creations of painter and sculptor.

In 1790 American charity was individual; in 1890 Chicago alone expended \$8,000,000 in charity, supporting fifty-nine hospitals and asylums.

In 1790 the church gatherings formed almost the sole social occasions of New England; in 1890 Chicago had in addition to its three hundred churches and its Christian associations for young men and young women, nearly seven hundred literary societies, and nearly fifty social clubs,

In 1790, the United States were largely dependent upon Europe for all supplies; in 1890 Chicago has as tributaries the markets of the world specially contributing grain, meat and lumber.

In 1790 it required the enthusiasm of local patriotism to induce the veriest book-worm to read the writings of Americans; to-day Chicago is the home of several writers whose works are read abroad, while its publishing houses have begun to extend their labors far beyond the limits of the twenty-five millions of persons who naturally look to Chicago as their metropolis.

These statements show conclusively that Chicago is representative of the United States in the order as well as in the magnitude and rapidity of its development.

THE CEMETERIES.

The last resting-places of the dead, even when these went forth into another world without the pomp which attends the great man, marshaled to their earthly tomb only by sorrowing relatives and friends, — even thus the places hallowed by our recollections have a strange charm for us all. Greenwood, Mount Auburn and the cemeteries of the various Eastern cities, are among the objects seldom neglected by the sight-seer, for it would seem as though the respect paid to the mute memorials to lives once highly prized, was among the marks which distinguish a Christian civilization from barbarism. At any rate the popular veneration for the grass-grown mounds which seem to suggest a resurrection from mortifying mortality to a brighter and more spiritual life is deeply seated and even in an age of materialism refuses to put away its sentiment however plausible the argument of the utilitarian.

Chicago has not been unmindful of the dead amidst the feverish activity of the living, and its cemeteries are like garden spots in the heart of a dense forest.

Rosehill Cemetery is six and a half miles from the city, and is reached by the Chicago and Northwestern R. R. At the main entrance is a chapel for the conduct of funeral services and the inclosure of five hundred acres presents a grateful variety of walks and drives, while the verdure is contrasted with the silver network of running streams.

The Roman Catholics use Calvary Cemetery, which lies yet four miles beyond Rosehill, and those who are familiar with Roman Catholic customs will readily

imagine the beauty of a spot so sacred to the believers in the doctrines of Rome.

Graceland Cemetery, like Rosehill, is six miles from the city but it lies to the north and is reached by the Chicago, Milwaukee and St. Paul R. R. Visitors to Chicago will feel well repaid by a visit to Graceland, both because of its exceptional beauty, and because here rests the body of John Kinzie, Chicago's earliest white settler.

Oakwoods Cemetery lies to the southwest and may be reached by the Illinois Central R. R.

Four and a half miles from the city is Waldheim Cemetery, where the Odd Fellows have chosen the last resting-place for members of their order.

In 1848 Chicago received its first telegram, the first boat passed through the canal, the first railway train left the city, and the earliest imports were received.

In 1849 it will be remembered was the year of the violent breaking out of the California gold fever, and Chicago at once responded to its influence and the Asiatic cholera committed great ravages. The same year witnessed the introduction of gas for street lighting, while the next year brought provision for a supply of water.

In 1853 the Chicago tunnel was projected, and the same year was marked by the occurrence of strikes which foreshadowed the prostration of industry which occurred in 1877.

In 1856 Kansas was the maelstrom of political action and Chicago took an active part in supporting the anti-slavery party. The same year was marked by legal action looking to the raising of the city's grade and the once wonderful achievements in the matter of raising and moving buildings were the theme of general comment throughout the United States. It was likewise in 1857 that Chicago made her first European exports.

In 1850 Chicago began to realize that satisfactory drainage could never be obtained by temporary expedients and that without adequate drainage the city must suffer from the same influences as formerly made New Orleans so fatal to health. In 1856 the first carefully devised plans of sewerage were carried out.

In 1862 it was decided to build the Crib and the famous Tunnel and five years later this Herculean undertaking had been accomplished, not only supplying the city with pure water, but furnishing endless

entertainment to pleasure seekers and to the stranger within the gates.

In 1869 the water tower was completed and altogether apart from its utilitarian objects it has through its beauty been the Mecca of many a Chicago pilgrim. Its exterior is described by architects as the "Castellated Gothic," but its office unlike that of the European castles is to guard the interests of the people.

WAR HISTORY.

The story of our Civil War is still too fresh in the memories of all to justify repetition, but mention must be made of Chicago as the home of John A. Logan and the Department Headquarters of Phil. Sheridan: and certainly Camp Douglas will prove of historic interest to every American, for among the prisoners of war there held in confinement were many whose memory is as dear in their Southern homes as their daring feats were helpful to the Lost Cause. Camp Douglas as a camp has passed away with the other painful suggestions of the war, but the ground upon which it stood has the same interest as the unmilitary scene of the Battle of Niagara. Civilization, in unconscious imitation of Mother Nature, has concealed the sign of decay by a new growth which suggests only the beneficent action on constructive activity. The Soldier's Home was one of the appropriate monuments which succeeded Camp Douglas, and no better incentive to intelligent patriotism could have been devised. Chicago's share

in the labors of the United States Sanitary Commissions may be suggested by the statements that \$1,056,192 in money and supplies was distributed by the generous custodians of this voluntary tribute paid by the masses as an evidence of the reality of their patriotism.

CHICAGO.

The city limits include a territory of 24 miles by 10 miles: the paved streets extend over 300 miles, 50 miles of Boulevards.

The South Side includes the great business interests of Chicago; State street being devoted to the pleasures of shopping.

The fine residences are found chiefly on the Boulevards, — Calumet, Indiana, Prairie and Michigan Avenues.

The North Side contains the leading retail stores which are specially to be found on Clark street.

The Chicago newspapers speak for themselves and have won an influence recognized throughout the United States and emphasized by the *New York World's* recent establishment of another paper in the city of Chicago. The leading papers have so prospered as to be housed in their own buildings and these again are among the architectural monuments of the city.

The *Chicago Tribune* is relatively “a sternwheeler” for it was founded so far back as 1847; but it has grown with the growth of the city and its immense issue goes forth daily from Madison and Dearborn streets. Its

editor, Joseph Medill, is a journalistic treasure won from Ohio by Illinois and for nearly twenty years he has carried the *Tribune* from one success to another.

The *Inter-Ocean*, Republican, was first issued in 1873 and it now occupies magnificent quarters (its own property,) on Madison street.

The *Chicago Times* was established in 1854 in the political interest of Stephen H. Douglas. Seven years later it became the property of Wilbur F. Storey, known to all during his life by his forceful personality, and after death by the litigation over the property which his intelligent energy had created.

The *Chicago Herald* has its home on Washington street near La Salle. It is Democratic in its politics but its independence has given an almost phenomenal circulation. Like the city, of Chicago, the *Herald* is but an infant in years although a giant in strength.

The Germans are specially represented by the Illinois *Staats-Zeitung*, founded some forty years ago and now housed on Fifth Avenue and Washington street. It is Republican in politics.

The *Freie Presse* is another German Republican paper, while the *Abendpost* is independent in politics.

The *Daily News* is now about seventeen years old, and has achieved success through its skillful condensation of its matter.

On Washington street is to be found the Chicago *Evening Post* which although but a yearling has already attained wide circulation and influence.

The stroller along Dearborn street will notice the building occupied by the Chicago *Evening Journal*, the organ of conservative Republicanism, and enjoying a

success built upon secure foundations, since its beginnings date back more than fifty years.

The *Chicago Globe* included among its founders Walter C. Newberry. It was founded less than five years ago, seemingly having grown out of the increasing need for a study of social problems especially as these affect the wage-earner.

The *Chicago Evening Mail* is one of the powerful influences of Chicago and its building stands of Fifth Avenue and Washington street.

REFLECTED GLORY.

One illustration of the advantages of our national unity may be found in the extent to which the various States are indebted for their reputations to the honors won by those born beyond their borders.

Massachusetts has increased the glory gained by her native-born children by borrowing from Switzerland — Louis J. R. Agassiz and Alexander Agassiz.

Maine — The War Governor John A. Andrew, the well-known writers C. A. Bartol and D. A. Wasson, Paul Ansel Chadbourne, Educator, Botanist and Chemist.

Vermont — the Theologians John Todd and Orestes A. Brownson.

New York — the Botanist, Asa Gray, and the Theologians, Joseph Cook, and O. B. Frothingham.

Ireland — the poet journalist, John Boyle O'Reilly.

New Hampshire — Arther Latham Perry, Social Scientist, James Freeman Clarke, Theological writer, and Daniel Webster, orator, statesman and patriot.

England—the great pamphleteer of the American Revolution, Thomas Paine.

Greece—the well-known scholar, E. A. Sophocles.

Connecticut—Noah Webster, the American Lexicographer.

New York increased its wealth by drawing from Germany—the humanitarian, Felix Adler and the journalist and orator, Joseph Pulitzer.

Vermont—President Chester A. Arthur and Thaddeus Stevens, journalist and statesman.

Demerara—the essayist, Park Benjamin.

New Hampshire—Henry W. Bellows, pulpit orator, and Horace Greeley the great journalist.

Connecticut—Henry Ward Beecher, T. W. Coit, and Samuel Seabury as representatives of religious power.

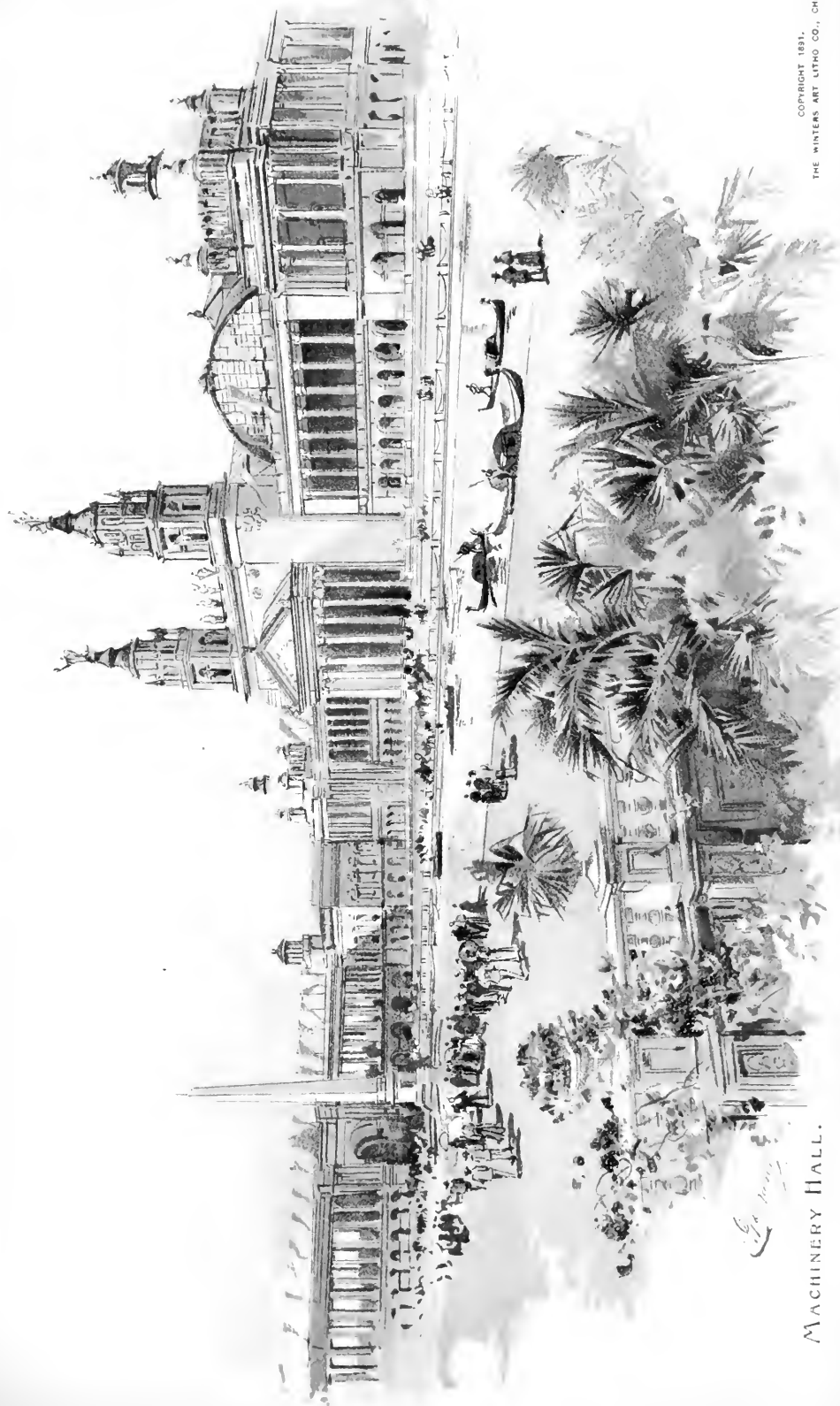
Massachusetts—The educators, F. A. P. Barnard, and Miss Anna C. Brackett, W. J. Rolfe the editor and scholar, William Cullen Bryant, poet and journalist, B. F. De Costa the historian, the graceful writer of poetry, Mrs. Rose Hawthorne Lathrop, George P. Ripley critic and journalist, Silas Wright the statesman, and the theologians Stephen H. Tyng and Richard Salters Storrs.

Scotland—James Gordon Bennett, journalist.

Ireland—Robert Bonner and E. L. Godkin, journalists and the prelate Archbishop Hughes.

Rhode Island—George William Curtis, journalist and golden-mouthed orator.

England—Henry Kiddle, Educator, Frederick Saunders, essayist, James Parton the popular biographer, and that remarkably versatile and eminent scientist, John William Draper.



MACHINERY HALL.

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Wales — Henry M. Stanley, the famous African explorer.

Maryland — The pastor of “ the little church around the corner,” C. F. Deems, and W. A. Hammond, known as surgeon and novelist.

Pennsylvania — George Alfred Townsend, the “ Gath ” of the journalistic world, and Henry George, the Tax-Reformer.

New Jersey — Park Godwin essayist, and T. De Witt Talmage, pulpit orator.

South Carolina — the celebrated journalist, W. H. Hurlbut.

Bermuda — Alexander Hamilton, statesman, financier, and patriot.

Ohio — Whitelaw Reid, journalist.

Kentucky owes to

Louisiana — the world-famed ornithologist, John J. Audubon.

Virginia — the distinguished orator and statesman, Henry Clay.

Connecticut — George D. Prentice, the celebrated journalist.

Michigan received from

Rhode Island — J. B. Angell, educator.

New Hampshire — Lewis Cass, orator and statesman, Moses Coit Tyler, literary historian, and H. P. Tappan.

Wisconsin owes to

Massachusetts — the distinguished metaphysician, author and educator, John Bascom.

Vermont — the eminent orator, Matt. H. Carpenter.

New Jersey borrowed from

Scotland — James McCosh, the Princeton metaphysician.

Ohio is indebted to

Germany — for the scientist, J. B. Stallo.

Massachusetts — for Horace Mann, the educator.

Illinois received from

New Jersey — Newton Bateman, the most eminent among her educators.

England — Robert Collyer the pulpit orator.

Vermont — Stephen H. Douglas the statesman.

Massachusetts — George Howland, poet and educator.

Kentucky — the martyr-President, Abraham Lincoln.

Maine — Josiah L. Pickard, the organizer of her public school system.

Ohio — Ulysses S. Grant — President and Lieutenant-General — as well as the pulpit orator, David Swing.

Missouri is under obligation to

Germany — for Carl Schurz, statesman, orator, and journalist; Charles L. Bernays, journalist; the celebrated botanist, Dr. George Engelmann; and for A. E. Kroeger, translator and author.

North Carolina — For Thomas H. Benton, one of America's most prescient statesmen.

Vermont — For A. J. Conant, artist and archaeologist, and for Ira Divoll who converted the Common School into the Public School and established the Public Library as the people's university: and for the ever invigorating life, sound theology, gifted utterances, and blameless life of Truman Post.

Connecticut — For William T. Harris who as an educator organized the public instruction of Missouri, and as a metaphysician took rank with the few

great names which have appeared since the days of Jonathan Edwards.

Maryland—For the rarely eloquent pulpit orator, Robert A. Holland.

Massachusetts—For the popular author, James K. Hosmer.

England—For C. V. Riley, the entomologist.

Ohio—For the critical and interpretative work of Denton J. Snider.

New Hampshire—For Sylvester Waterhouse, social scientist.

New York—For William B. Potter, metallurgist, and Francis E. Nipher, meteorologist.

California has drawn from

Ohio—H. H. Bancroft, the Ethnologist.

New York—Thomas Starr King, the gifted pulpit orator.

Pennsylvania has been enriched by receiving from Maryland—George W. Childs, philanthropist and journalist.

Massachusetts—Benjamin Franklin, scientist, statesman, author and patriot, and F. A. March, philologist.

New Hampshire owes to

New York—The profound scholar, Howard Crosby.

Virginia obtained from

Sweden—Schele De Vere, the philologist.

Maryland has drawn from

Connecticut—D. C. Gilman, educator, and Richard T. Ely, social scientist.

New York—Ira Remson, the chemist.

The District of Columbia has garnered from

New York—Joseph Henry, one of America's most eminent scientists and public benefactors.

Connecticut went beyond her boundaries to New Jersey—for Wm. G. Sumner, political economist.

Massachusetts—Wm. D. Whitney, philologist.

New York—The profound scholar, Theodore D. Woolsey.

Louisiana obtained from

Nova Scotia—Her Achilles in journalism, M. F. Big-
ney.

Indiana The gifted poet, Joaquin Miller.

Chicago's educational history may be accepted as representing the usual course of public administration of similar trusts. In the beginning well-meaning men carefully provided for the maintenance of the common school, but soon with insufficient provision the trustees sold for a mere song the school lands, which if retained would have relieved Chicago from all taxation for school purposes.

In 1853 the superintendency of schools was created and John C. Dore of Boston was called to fill the position—a typical recognition of New England as parent of the common school system, and of the belief that the wise men were still to come from the East.

In 1864 Josiah L. Pickard, LL.D. became Superintendent of Public Schools and began that wise, conservative and enterprising policy which has given him place with the men of whom the *Inland Journal of Education* thus speaks:

“The work left for other original minds was but to defend the advanced post already won, to articulate and

rationalize the means properly to be employed for realizing the no longer doubtful purpose of public instruction. This responsibility fell upon the shoulders of such men as James B. Angell, Wm. T. Harris, Josiah L. Pickard, A. J. Ricoff, John Hancock, John D. Philbrick, Henry Kiddle, and nobly did they respond: those intelligently interested in education will always cherish the reputations of these men as of those who "Deserve well of the Republic." For our present purpose the point to be emphasized is that these sagacious men kept always in view the wide distinction between the course of study suitable for an institution whose main object is to qualify the young for the fullest discharge of the duties of good citizenship, and the more special aims which from their nature private schools properly seek."

Dr. Pickard succeeded in resigning in 1877, having been recalled when once before he attempted to retire. He then became President of the Iowa State University where since his recent resignation he remains as Professor Emeritus. George Howland, identified with Chicago's educational history from 1857, was called from his position of Principal of the Chicago High School to that of the Superintendency, which he filled from 1881 till 1885, when he took off the educational harness.

LIBRARIES.

Libraries are less frequently visited by strangers, probably because of the difficulty of arriving by cursory inspection at any adequate idea of their value. Still as

it is certain that Chicago has now seriously undertaken the business of intellectual growth, and as her libraries represent magnificent benefactions from prosperous citizens, who thus recognize their obligations to make some adequate return to the city which has furnished their opportunities, many will wish to know about Chicago's present possessions.

The collection of the Historical Society has already reached one hundred and fifty thousand volumes, and the student of the antiquities of the Louisiana Territory will soon look upon the Historical Society as the American student of Shakespeare now regards the Lenox Library in New York City.

The Public Library has been greatly favored in the matter of revenue, and until recently used the experience of Frederick Poole, now in spite of his lack of age, a Nestor among librarians.

The Newberry Library now rising upon State and Oak Streets is the gift to the city of Walter L. Newberry, whose endowment now exceeds four millions of dollars.

The John Crerar Library is the result of a bequest of three millions of dollars, and he states as his object "the building up of character."

In order that those having but little time to spare may still appreciate the real beginning which Chicago has made in the matter of great libraries as the laboratories of industry, we have asked Frederick M. Crunden, Esq., Librarian St. Louis Public Library, and President of the American Librarians' Congress to furnish a few suggestions likely to meet such needs as his experience has taught him to provide for. He says in reply :

“A Librarian, of course, will know what he wants to see. He will want especially to examine the catalog, or the charging system, or the binding, or some other of the numerous details of practical administration. Or he may want to see what books on a special subject are contained in the collection. The student, too, comes to a library for a special purpose. He, of course, will go straight to the Librarian or one of the senior assistants, state his wants, and receive the desired aid and information. With the general visitor the case is different. He comes “to see the Library.” If he has seen other libraries, i. e., if he has frequented them, he will have some definite ideas which will serve as a basis of inquiry and comparison. But suppose he knows nothing about a public library, suppose he has had little time for reading, and that has been restricted to newspapers and periodicals and the few books he has at home. Suppose he finds himself, for the first time in many years, with a few weeks’ leisure and he decides to see, among other objects of interest, the public library of which, perhaps, he has heard at home, and which he learns is one of the show places of the city he is visiting — it may be its special pride and glory — what shall he look for when he gets there?

“If it is an old building he may admire its handsome façade, its vaulted ceilings with faded frescoes, and its cosy alcoves suggestive of favorites haunts of the student recluse; while the Cathedral-like appearance of the room and the dim religious light that prevails, impress our visitor with the feeling that he is in an atmosphere of mediævalism. He may be awed; his ideal of a library may have been filled; but he has not been greatly informed; and he is glad to get out again

into the light of day. In the latest buildings he may admire the handsome finish and furniture; but he is apt to reflect that his bank has still finer; and he will go away disappointed unless he brings with him some notion of the function of a public library, and the means by which its objects are accomplished. What then shall he look for and inquire about?

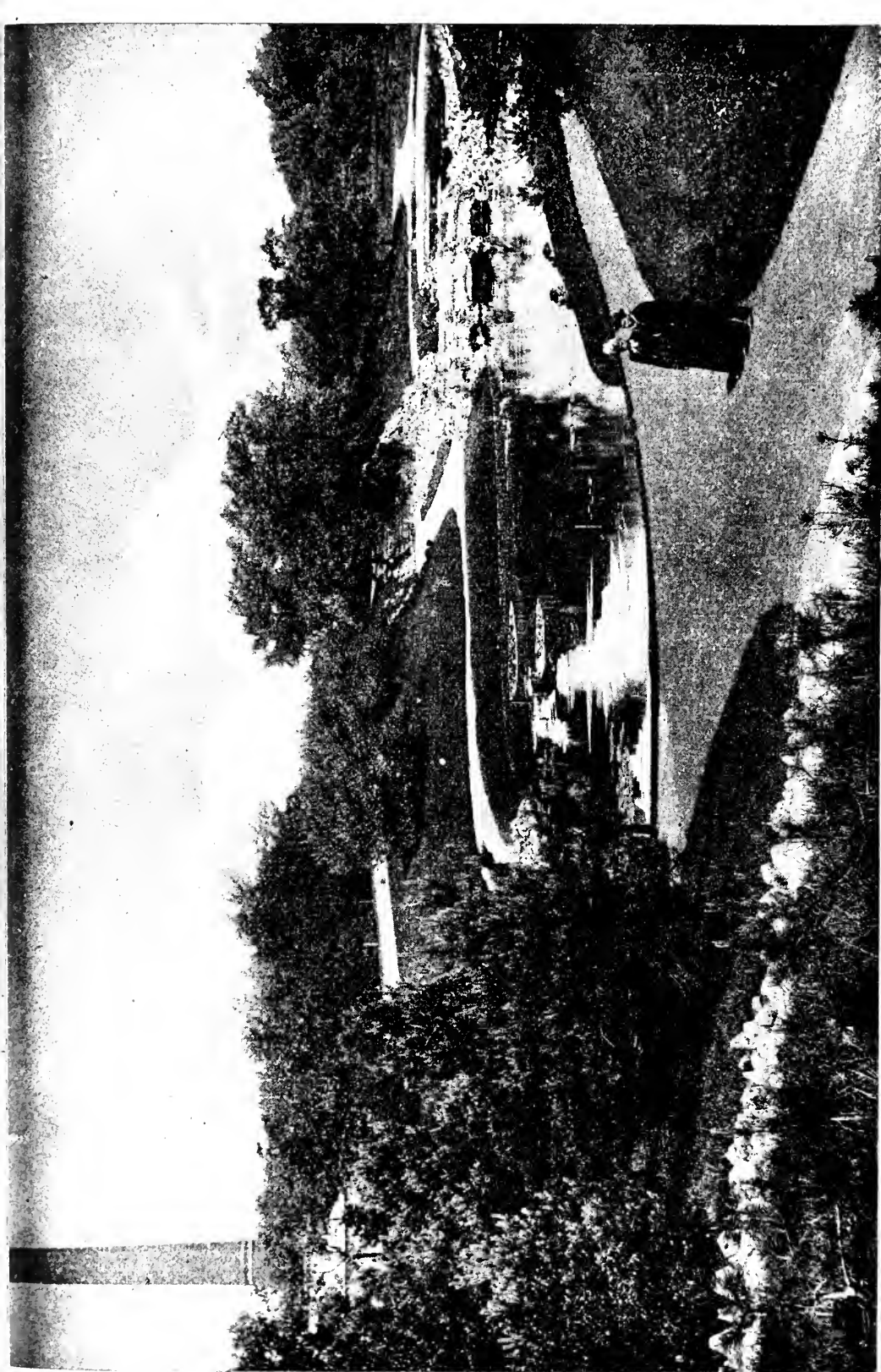
“The number of volumes he will, of course, want to know. That is the first question asked by every one. He may not think to ask the yearly or the daily issue of books; but the Librarian is likely to volunteer this information, since librarians are prouder of the number of volumes circulated than of the number owned. What next? Well, if the visitor is at all curious he will like to see how the books are shelved, how they are classified and kept in order, and how the place of each is marked, so that a boy or girl can find it. He may be glad to have a brief explanation of the process of cataloging a book, and the methods by which the annual or triennial inventory is taken without interfering with the circulation. The plan and the way of using the catalog is sure to be of interest, for the catalog is the clue to the maze, the guide through the labyrinth. Then the intelligent visitor will perhaps wonder how 500 or 1000 volumes a day can be given out by a few clerks, and such a record of them kept that the Librarian can tell at any moment what book or books each member has, and when they should be returned, or where each book in the collection is, whether on the shelves, at the bindery, or in the hands of a certain member. Further there are interesting questions as to classes of readers and kinds of books read, the most popular works and authors, and the

changes in public taste that have taken place in a decade or more. Some of these facts the Librarian can give in exact figures, and on other points he can give trustworthy and interesting information.

“Another line of inquiry will lead to revelations of greater and more general interest in the shape of special collections or single volumes which invite inspection because of their age, or their great rarity and beauty, or from some peculiar circumstance such, for example, as marginalia in the handwriting of some great man who once possessed them. Every library of any size and age has more or less to show in this line. The Boston Athenæum, for instance, possesses George Washington’s private library. The Boston Public Library has several collections of priceless value. It is specially strong in Americana, one of its late acquisitions being the original manuscript letter of Columbus announcing his discovery, which cost \$2,000. The Newberry Library in Chicago already has the finest musical collection in the country, including a copy of the first opera ever written. The St. Louis Public Library has had to supply a wide and active constituency with a very small revenue, and hence has had but little money to spare for incunabula or other bibliographical curiosities; and yet it has gathered a few old, rare and curious volumes, such as an original edition of *Paradise Lost*, a copy of Camden’s *Britannia* (published 1587) presented by “Gulielmus Camdenus” to his “optimo et intimo amico Robert,” not to mention hundreds of modern books valued for their intrinsic worth and beauty.”

CHICAGO LITERATI.

- Mary Abbott — Alexia.
Willis J. Abbott — Blue Jackets.
J. N. Arnold — Biographer of Abraham Lincoln and Benedict Arnold.
J. P. Altgeld — Our Penal System.
Leroy Armstrong — An Indian Man.
Dr. Lewis J. Block — Exile, a Poem.
Mrs. C. R. Burnham — Next Door.
Marguerite Bovert — Sweet William.
Mary E. Burt — Literary Landmarks.
Paul Carus — The Soul of Man.
Mary Hartwell Catherwood — The Story of Tonty.
J. D. Caton — Summer in Norway.
Mrs. C. E. Cheney — History of the Civil War.
Caroline F. Corbin — Rebecca.
T. S. Dennison — The Iron Crown.
Prof. C. S. Farrar — Art Topics.
John F. Finerty — War Path and Bivouac.
J. W. Foster — Pre-historic Races.
H. B. Fuller — Chevalier of Penser-Vani.
Amy Fay — Music Study in Germany.
Eugene Field — Little Book of Western Verse.
Prof. F. W. Fiske — Manual of Preaching.
F. W. Gunsaulus — Monk and Knight.
Elizabeth Harrison — A Study in Child Nature.
Eugene J. Hall — Poems for Farm and Fireside.
George Howland — Poems.
Augustus Jacobson — Higher Ground.
Jenkin Lloyd Jones — Faith that makes Faithful.
Elizabeth S. Kirkland — Short History of France.



LILY PONDS, LINCOLN PARK.

Joseph Kirkland — Zury.
Mrs. J. H. Kinzie — Waubun.
Charles L. Marsh — Opening the Oyster.
W. S. B. Mathews — How to understand Music.
William Matthews — Getting on in the World.
Charles H. Roberts — Down the Ohio.
Opie P. Reed — A Kentucky Colonel.
W. M. Salter — Ethical Religion.
Margaret F. Sullivan — Mexico.
Caroline K. Sherman — Goethe.
Helen E. Starrett — Letters to a Daughter.
Rev. David Swing — Club Essays.
Benjamin F. Taylor — Poems.
George P. Upton — Standard Operas.
Dr. Louis Watson — A Strange Infatuation.
E. B. Washburne — Sketch of Edward Coles.
Frances P. Willard — Nineteen Beautiful Years.
Celia P. Woolley — Rachel Armstrong.

LITERARY PRODUCTIVENESS.

Chicago postponed all literary effort until the seemingly more pressing labors of the builders of a city had been fairly accomplished. Not but that it supported a press alike capable and influential, nor that it failed to find frequent opportunity for listening to the most eminent preachers and speakers. But the period down to 1870 was similar to that passed through by America herself when engrossed in the struggle for daily existence she satisfied her slight need for literary stimulus by an acquaintance with work being done in the East.

Mrs. J. N. Kinzie published in 1857 a book called *Waubun*, which however little known to those not to the manner born, has received high praise from the local judges of Chicago. George P. Upton is known to all readers of musical literature and his first appearance above the literary horizon belongs to the seventies. George F. Root and H. C. Work are the authors of many war songs whose popularity promises to be perennial. The names of Benjamin F. Taylor, poet, and of Professor J. R. Boise, classical scholar, are so widely known as to render specialization unnecessary.

The Rev. David Swing, the Rev. Robert Collyer, and Dwight L. Moody represent the pulpit's contribution to influences recognized throughout the land.

Chicago is the home of Isaac N. Arnold, the biographer of Abraham Lincoln and of Benedict Arnold; of Williams S. Mathews, whose unrivaled book called "Getting on in the World" has been overshadowed by the volume of his subsequent productiveness.

CHURCHES.

Christ's Episcopal Church — 24th Street and Michigan Ave.

Centenary M. E. Church — Monroe and Morgan Sts.

Cathedral of the Holy Name — Superior and State Sts.

Cathedral of Saints Peter and Paul — Exchange and 11th Sts.

Episcopal Cathedral — Peoria St. and Washington Boulevard.

The Epiphany — Adams and Ashland.

Emanuel Baptist Church — Michigan Ave. near 23d St.

First Baptist Church — 31st St. and Park Ave.

First Congregational Church — Ann St. and Indiana Ave.

First Presbyterian Church, 21st and Indiana avenue.

Grace Episcopal Church — Wabash Avenue.

Moody's Church — Chicago and La Salle Sts.

The Messiah — Flouray and Washington.

Plymouth Congregational Church — 26th St. and Michigan Ave.

St. James Reformed Episcopal Church — Cass and Huron Sts.

Second Presbyterian Church — 20th and Michigan Ave.

Second Baptist Church — Monroe and Morgan Sts.

Sinai Synagogue — Indiana Ave. and 21st St.

St. Paul's Episcopal Church — Adams St. and Winchester Ave.

Third Presbyterian Church — Ogden Ave. and Ashland Boulevard.

Union Park Congregational Church — Ashland Ave. and Washington Boulevard.

Unity Church — Dearborn Ave. and Walton Place.

Westminster Presbyterian Church — Peoria and Jackson Sts.

Zion Temple.

IMPRESSIVE PUBLIC BUILDINGS.

The Auditorium — Michigan Ave. between Congress and Jackson Sts.

Adams Express Building — Washington between Dearborn and State Sts.

Borden Block, Randolph and Dearborn.

Board of Trade — La Salle and Jackson Sts.

City Hall — Washington, Clark, Randolph, and La Salle.

Chamber of Commerce Building — Foot of La Salle St.

Caxton Building, 328 Dearborn.

Exposition Building — Lake Front.

First National Bank — Dearborn and Monroe Sts.

First Regiment Armory — 16th St. and Michigan Ave.

Gannis Block — Illinois Bank Building, 230 La Salle Street.

Gaff Building — 230 La Salle.

Home Insurance Building — 205 La Salle Street.

Insurance Exchange — La Salle near Jackson.

Montauk Block, 111 Montauk Block.

Monadnock.

Marshall Field and Co.'s — Adams, Franklin Quincy and Fifth Ave.

Masonic Temple — State and Randolph Sts.

Manhattan Building — Dearborn and Monroe Sts.

Manon Block, 320 Dearborn.

Newberry Library — Oak and State Sts.

Newspapers:

Abend Post — 181 Washington.

Chicago Evening Journal.—161 Dearborn.

“ “ Post—166 Washington.

“ Globe—Washington and 5th Ave.

“ Herald—La Salle and Washington Sts.

“ Inter-Ocean—Madison and Dearborn Sts.

“ Mail—Washington and 5th Ave.

“ Times—La Salle and Washington Sts.

“ Tribune—Madison and Dearborn Sts.

Daily News—La Salle and Washington Sts.

Freie Presse—94 Fifth Ave.

Illinois Staats-Zeitung—Washington and 5th Ave.

Owings Building—Adams and Dearborn Sts.

Phoenix Building—128 Jackson.

Pike Block.

Pullman Building—Michigan avenue and Monroe Street.

Rialto Building—La Salle and Adams.

The Rookery—Monroe and La Salle.

Traders' Building—6 Pacific Avenue.

Temperance Tabernacle—La Salle and Monroe.

Tacoma Building—Madison and La Salle.

United States Buildings:

Appraiser's Building—Harrison and Sherman.

Custom-House—Dearborn, Jackson, Clark and Adams.

Post-Office.

Woman's Medical College—325 South Lincoln.

Young Men's Christian Association—148 Madison Street.

Railway Depots:

Polk Street and Third Avenue—Wabash.

Polk Street and Third Avenue — Chicago and Erie.
Polk Street and Third Avenue — Chicago and Grand
Trunk.

Polk Street and Third Avenue — Atchison, Topeka,
and Sante Fé.

Front and Monroe Sts.— Baltimore and Ohio.

Canal and Adams Sts.— Chicago and Alton.

Canal and Adams Sts.— Chicago Burlington and
Quincy.

Canal and Adams Sts.— Chicago St. Louis and
Pittsburg.

Canal and Adams Sts.— Pittsburg, Fort Wayne and
Chicago.

Fifth Avenue and Harrison St.— Michigan Central.

Fifth Avenue and Harrison St.— Chicago, St. Paul
and Kansas City.

Fifth Avenue and Harrison St.— Chicago and
Northern Pacific.

Wells and Kinzie Sts.— Chicago and Northwestern.

Van Buren and Sherman Sts.— Chicago Rock
Island and Pacific.

Van Buren and Kinzie Sts.— Lakeshore and Michi-
gan Southern.

Lake Street — C. C. C. and St. Louis.

Lake Street — Illinois Central.

CHICAGO LITERATI.

In spite of its strong material bias, there has always been a decided literary interest in Chicago, as is shown by the many clubs and societies organized for the study

of great books. People of culture were flocking to the city from the whole world, and did not lose their previous taste for letters. Chicago had its spell of Browning, and still to-day the poet is by no means neglected. In the year 1886 Mr. D. J. Snider made his first appearance in Chicago as a permanent resident, and devoted his time to working up the subject of literature as it is manifested in what he calls Four Literary Bibles — Homer, Dante, Shakespeare, Goethe — showing a spiritual connection and succession in the great poems of the world. After a year of preparatory work, Mr. Snider started his system of Literary Schools, the object of which was to arouse public interest by lectures from the most distinguished specialists in a given literary field. The first was the Dante School, during the holidays of 1887, in which, among other noted lecturers, Dr. W. T. Harris, present Commissioner of Education, and Prof. Thomas Davidson, founder of the Dante Society of New York, took part.

This Dante School was noticed quite extensively in the press of the country, which in a bantering way for the most part, declared that Chicago had taken a new departure. In the following year, 1888, the Goethe School took place after a course of preparatory lectures by Mr. Snider, which were well attended. Then in the year 1889 Shakespeare had his turn, with Chicago's then most distinguished clergymen among the lecturers. Prof. David Swing, Rev. Dr. Gonsaulus, and the Rev. Dr. Lorimer. In the week after Easter, 1891, the Homer School had its session, which was maintained with unabated zeal and members, though Chicago was in the midst of an epidemic of "grippe."

Thus Mr. Snider's cycle of Literary Bibles has been completed, and there is no sign of dropping the work. In the week after Easter, 1892, it is proposed to have the Dante School, with which the second cycle of study of the great poems of the world will begin.

CLUBS.

Clubs, social and literary, seem to belong to metropolitan life, and though they directly affect the lives of but a small portion of any community, they generally excite popular interest because of their fine buildings, their social prestige, or their active influence in matters of current interest.

Chicago is well supplied with the materials for club life, and the better known associations are as follows:

The Calumet Club (social), Calumet avenue and Twentieth street.

Chicago Club (social), Monroe between State and Wabash avenue.

Chicago Woman's Club (reformatory).

Electric Club (scientific), 103 Adams street.

Fortnightly Club (social and literary), Art Institute.

Illinois Club (social), 154 South Ashland avenue.

Iroquois Club (social), 110 Monroe street.

La Salle Club (social), 252 Monroe street.

Standard Club (social), Michigan avenue and Thirteenth street.

Sunset Club (social and literary).

Union Club (social), Washington place and Dearborn street.

University Club (social), Dearborn street and Calhoun place.

Union League Club (political), Fourth avenue and Jackson street.

White Chapel Club (social), 122 La Salle street.

Wah Nah Ton Club (political).

American philosophy requires one to pay attention to one's capabilities as well as to his short-comings.

The leading artists of the day find a satisfactory market in Chicago, and as the star of empire moves westward, will increasingly extend their vision beyond New York, Boston, Philadelphia and Hartford. Firms such as Goupil have already learned that they have a profitable territory west of Niagara; and it is commonly known that it was a Californian who employed the skill of Meissonier, while Corots, Bougereaus, Verboeckhovens, are to be found in Chicago, St. Louis, Detroit and Cincinnati, as well as in the Eastern states.

Thus far Chicago has established in addition to a flourishing Art School:

The Academy of Design.

The Art Institute—Michigan avenue and Van Buren street.

The Bemis Gallery.

Gunther's—State, between Monroe and Adams street.

The Vincennes Gallery.

ART GALLERIES.

It was thoroughly characteristic of Chicago to devote its first energies to the development of the *corpus sanum*, but the time has come when it is justified in seeking the *mens sana*. Art requires for its sustenance a considerable clientele of wealthy purchasers of its various forms of

expression, and hence before the West could establish galleries, it was necessary that it should secure its material prosperity.

Many costly works of art are now owned in Chicago. So, as our readers will notice, two of the more interesting portraits of Christopher Columbus are in Chicago. The excessive self-assertion of the West frequently leads the East to mock at Western boastfulness, for if it cannot compete in healthful activity it has an impregnable position when it falls back upon its precedence in point of time. But it does not seem to have been noticed that if the West is boastful it can point to achievements palliating its boastfulness; nor that the very boastfulness itself is largely caused by its attempt, when grown, to secure emancipation from the tutelage of youth. Censors should remember that any lacking in age will be corrected by time.

PARKS.

WEST SIDE.—Humboldt—containing 200 acres. It is reached by the Milwaukee Avenue Cable, which runs along Madison street.

Vernon—

Garfield—containing 186 acres, and reached by the Madison Street Cable.

Douglas—containing 180 acres, and reached by the Madison Street and Ogden Avenue Cable.

Union—containing 143 acres, and reached by Madison Street Cable.

SOUTH SIDE.—Washington—containing 371 acres, and reached by the State Street and Wabash Avenue Cable. Take the car marked *Cottage Grove*.

Jackson—containing 593 acres, extending from Fifty-



sixth street to Sixty-seventh street, and reached by Cottage Grove Avenue Cable.

Midway Plaisance—containing 80 acres, and reached by State Street Cable.

Lake Front—

NORTH SIDE.—Lincoln—containing 250 acres, and reached by Wells Street Cable, or by North State street cars. It contains the Zoological Garden, with its aviaries, green-houses and palm-houses. Here are to be found sealions, bears, antelopes, buffalo, prairie-dogs, deer, foxes, raccoons, and wolves. It is rich in statuary, having memorials of Lincoln, Grant, La Salle, Schiller, Linnæus, besides a symbolical sculpture known as the Indian Group. An electrical fountain is likewise included in its objects of interest. It furnishes eight miles of drives, nine miles of walks, and twenty acres of water-surface.

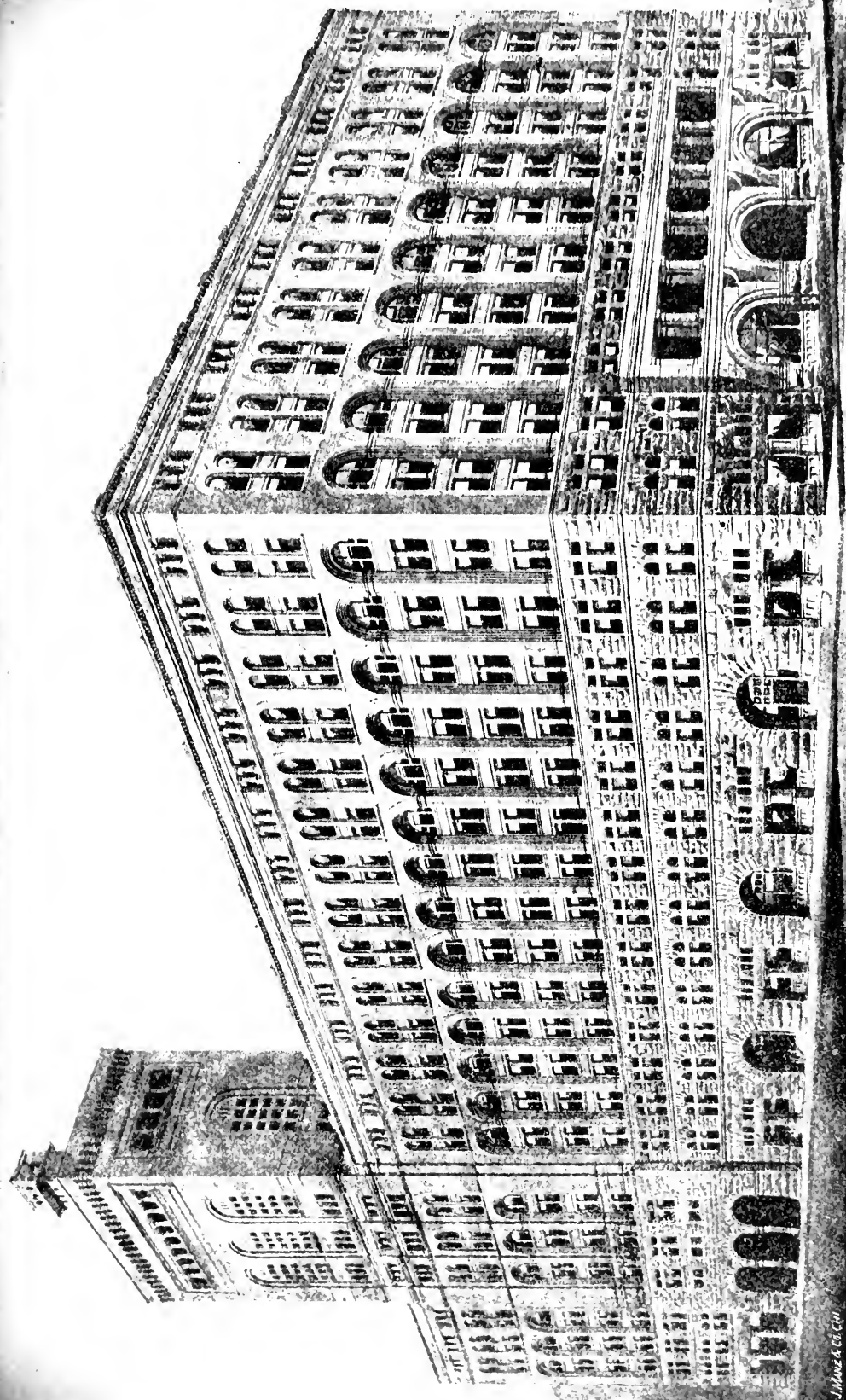
The following tribute to America's political savior is so fit a memorial that it is a great pleasure to publish it for the first time in "The Historical World's Columbian Exposition and Chicago Guide":

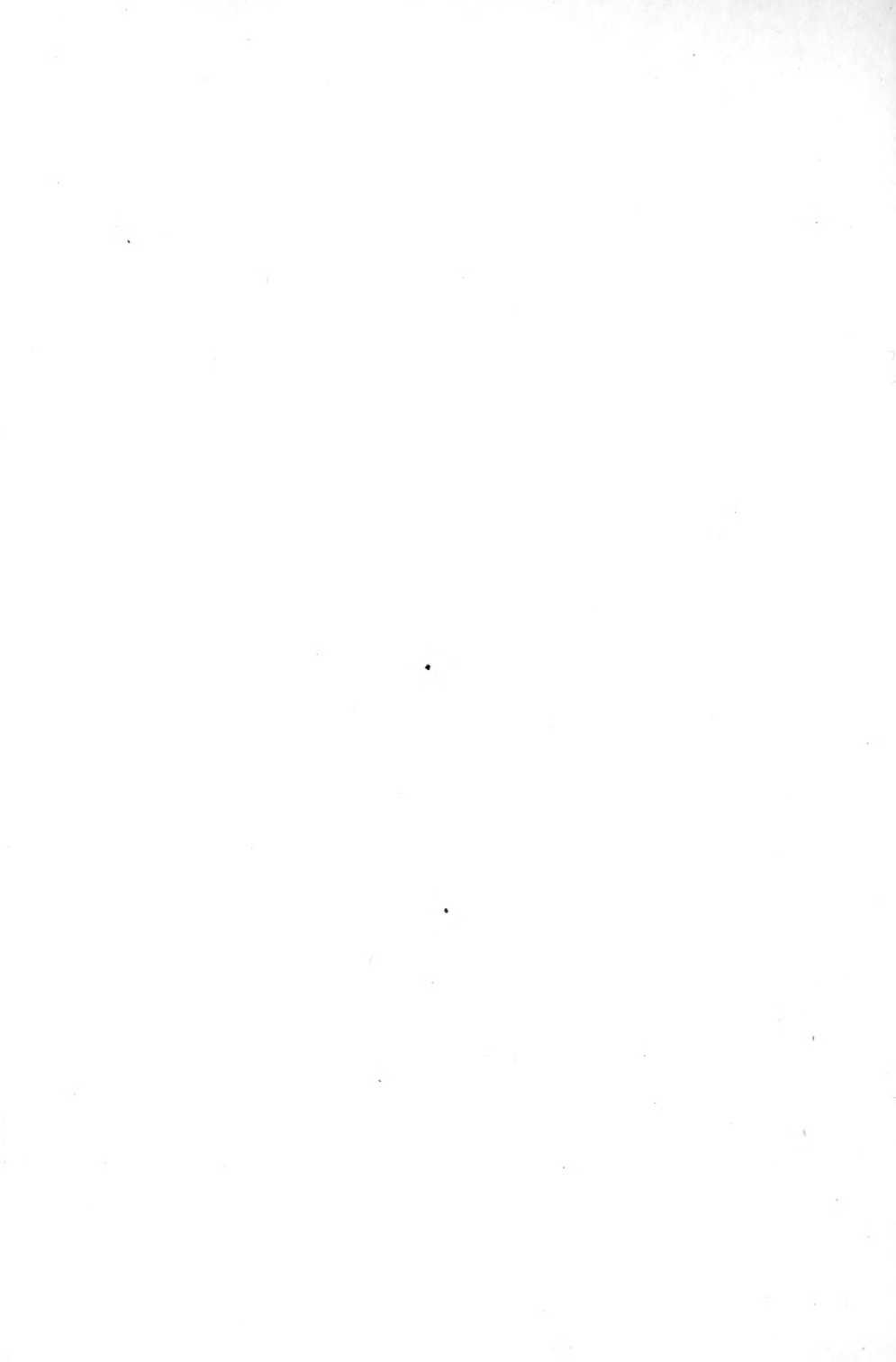
ABRAHAM LINCOLN.

A child of nature; he was born and reared
Amidst her pathless woods and prairies wild.
She early taught her sympathetic child
The lessons rich, whose noble fruit appeared
In his grand life: and nothing he so feared
As false to prove unto her teaching mild.
Not power vast or wrathful threats beguiled
His steadfast soul, or his quick conscience seared.
Anear the people's heart he ever stood,
And, listening, heard its constant, faithful beat:
Not as the demagogue, who vainly tries
Each veering wind to catch for his own good,
But knowing well that paths made by their feet
By certain steps to Freedom's temple rise.

WM. J. S. BRYAN.

January 13th, 1892.





HOTELS.

Of course, between now and 1893, Chicago will add largely to its hotel accommodations, but the leading hotels of the present will have lost none of their attractions.

Many things unite to render the Auditorium (Michigan avenue between Congress and Jackson streets) easily chief. As a building, the Auditorium is one of the wonders of Chicago, and adds to its other attractions the possession of a theatre whose seating capacity exceeds that of any other public assembly-room. Every luxury known in the best American hotels (and the best American hotels are certainly the best hotels in the world) is to be commanded at the Auditorium.

The Chicago Hotel (Dearborn and Adams streets) is to compete with the Auditorium for the highest-class patronage.

The Grand Pacific Hotel (Clark, Jackson and La Salle streets) has long been a favorite with the visitor to Chicago.

The Leland (Michigan avenue and Jackson street) has maintained the traditional reputation of the Lelands as keepers of hotels.

The Palmer House (State and Monroe streets) was, when built, a seven-days' wonder, and has continued to be one of the most popular of Chicago's hotels.

The Sherman House (Clark and Randolph streets) has been eclipsed by more modern and more showy buildings, but the comfort which it once furnished is still to be found there.

The Saratoga Hotel (155 Dearborn street) is among the latest additions to the conveniences of the traveling public.

The Tremont House (Lake and Dearborn streets), like the Sherman House, has been crowded back by its more ambitious competitors, but this very fact recommends it to the experienced traveler.

The Richelieu (Michigan avenue between Jackson and Van Buren streets) is, both in location and management, one of the most select hotels of Chicago.

The Pullman occupies the top story of the Pullman Building (Michigan avenue and Adams street), and enables one while feasting his palate to feast his eyes upon Lake Michigan and an attractive landscape.

The Wellington is a fine new hotel, and is located on Wabash avenue and Jackson street.

LIBRARIES AND SOCIETIES.

Crerar Library.

Chicago Athenæum Library, 16-26 Van Buren street.

Chicago Astronomical Society.

Chicago Academy of Science.

Newberry Library, Oak and State streets.

State Microscopical Society.

Society of Decorative Art.

Union Catholic Library.

Public Library, City Hall.

Western Society of Engineers.

Young Men's Christian Association, 148 Madison street.

THEATRES.

Auditorium, Michigan avenue between Van Buren and Congress streets.

Chicago Opera House, Washington and Clark streets.

Central Music Hall, Randolph and State streets.

Columbia Theatre, Monroe and Dearborn street.

Grand Opera House, Clark street between Randolph and Washington.

Haymarket Theatre, Madison and Halstead streets.

Hooley's Theatre, Randolph and La Salle streets.

McVicker's Theatre, Madison between State and Dearborn streets.

Panorama Building, Wabash avenue and Hubbard Court.

MEDICAL COLLEGES AND HOSPITALS.

Alexian Brothers Hospital, 539 N. Clark street.

College of Physicians and Surgeons.

Chicago Homœopathic College.

Hospital for Women and Children.

Hahnemann Medical College.

Hahnemann Hospital.

GREAT INDUSTRIES.

Everyone has heard of the stockyards of Chicago, and those whose attention is not engrossed by the unpleasant features belonging to a slaughter-pen, always find that a visit is well worth the time; for a business representing over two hundred and thirty millions of dollars annual manufacture is impressive, if merely from its vastness.

Chicago as a grain market is quite as generally known, since for the year 1890, it handled 173,353,461 bushels of the grain of the United States, and 4,358,058 barrels of its flour.

Still again, Chicago is a lumber centre, as may be realized from the fact that it handled 2,050,000,000 feet of the lumber produced in 1890.

The volume of Chicago's commerce is indicated by its returns as a port of entry, which show that for the year 1890 it paid duties amounting to \$13,518,896.33.

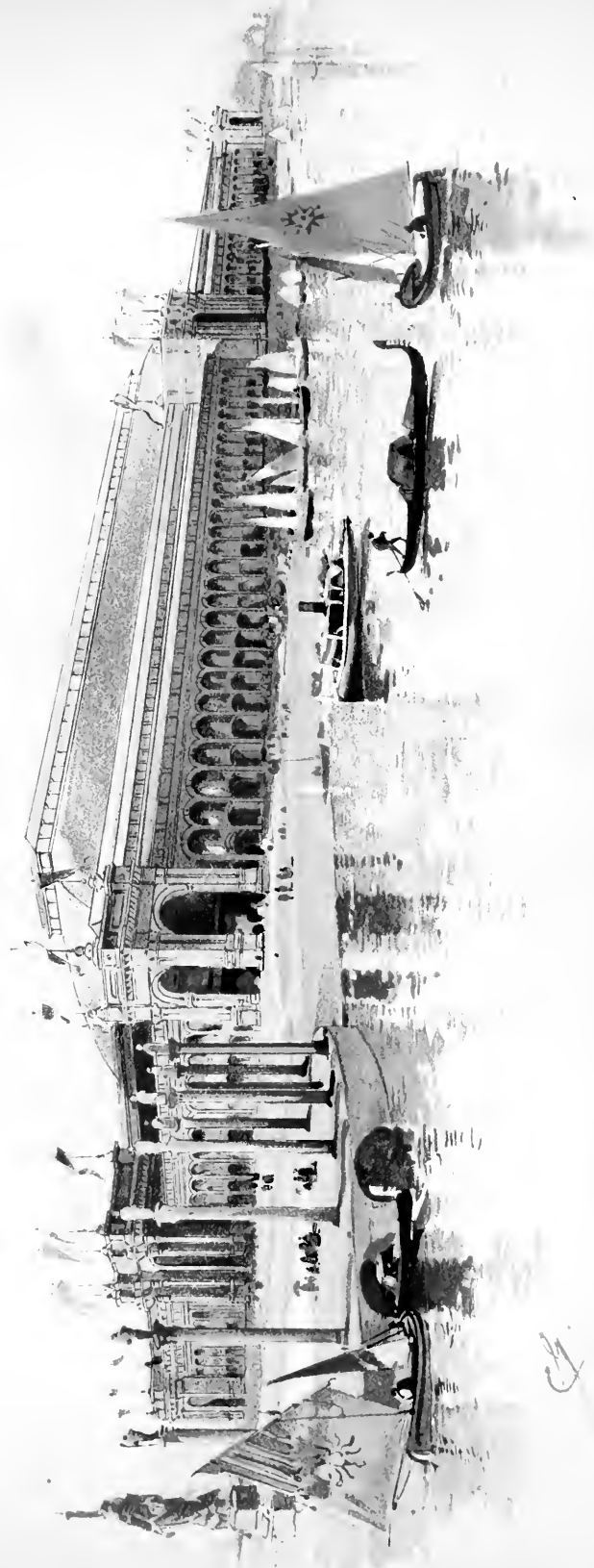
The wholesale trade in boots and shoes, carriages and wagons, dry goods, furniture, glassware, millinery, patent medicines, rubber goods, and ready-made clothing is likewise of great extent.

To the chronicles of Chicago should be added the following events which have attracted general attention:

1837-1838.—High-water flood, destroying property whose amount, though seemingly small to us of the present day, meant almost ruin at a time when the total wealth of a great city was less than that which is now possessed by many a plutocrat.

1877.—The labor riots, which, though most destructive at Pittsburg, did not spare any of the great centres of industry.

1886.—The Haymarket riot of May 4th, which led many doubting Thomases to despair of American institutions, and flooded the papers and magazines with literary nostrums headed Communism and Socialism. The bomb which initiated the riot was thrown from a point about two hundred feet from the memorial which has been erected to mark the event. It will doubtless be fresh in the minds of all that death was the penalty inflicted upon Engel, Fielding, Fischer and Spies, and life-imprisonment that which was awarded to Neebe, Parsons, Schwab and Ling; the last-named, however, committing suicide. The scene of the inception of the riot was Lake street near Desplaines.



MANUFACTURES AND LIBERAL ARTS BUILDING.

DEPARTMENTS
OF THE
WORLD'S COLUMBIAN EXPOSITION.

- I. The Fine Arts.
- II. The Liberal Arts; Education, Engineering, Public Works, Architecture, Music and the Drama.
- III. Mines, Mining and Metallurgy.
- IV. Ethnology and Archæology.
- V. Electricity and Electrical Appliances.
- VI. Transportation.
- VII. Manufactures.
- VIII. Machinery.
- IX. Forestry and Forest Products.
- X. Agriculture; Food and Food Products, Farming Machinery and Appliances.
- XI. Viticulture, Horticulture and Floriculture.
- XII. Live Stock.
- XIII. Fish and Fisheries; Fish Products and Apparatus.
- XIV. Foreign Affairs.
- XV. Publicity and Promotion.

DEPARTMENT OF FINE ARTS.

Paris, in 1867, undertook to show the results of art as applied to articles of daily life, and her "History of Labor" will be revised under more favorable conditions and upon a far grander scale at Chicago; certainly the World's Columbian Exposition may be made the most efficient of instructors.

The great living artists who are still busy with the production of their works will certainly be represented; for patriotism and personal interests will stimulate Americans, while foreigners will recognize that the United States have become the most satisfactory market for their creations. There is no foreign artist of good repute whose work cannot be found in some gallery of the United States, and as Director Ives has proved his successful management of loan exhibitions, there can be no doubt but that he will be able to secure the *chefs-d'œuvres* of living artists, even though this should require application to private owners.

Reflect but for a moment upon the treasures of the Vatican, of Florence, of Siena, of Munich, Dresden, Vienna, and Berlin; of Madrid, of the Louvre, and of the art galleries of Great Britain, and you can realize a Europe in America. Many celebrated paintings and sculptures cannot safely be transported, but yet the skill of the engraver and of the photographer can at least reproduce all but their coloring. Hear what the poet-critic says of an Italian gallery, and then imagine the pleasure furnished any one who will at all prepare himself to enjoy the great work of the most successful artists:

NOTES ON DESIGNS OF THE OLD MASTERS
AT FLORENCE.

BY ALGERNON CHARLES SWINBURNE.

But among the arts we must not forget the photograph and the various modern processes by which there is brought before us at least the semblance of objects inaccessible at first hand. Autotypes, photogravures and photographs, though losing the effects of color, furnish accurately all that is needed for an intelligent study of the fine arts; and these processes have been carried to such a degree of perfection as to promise a panorama which will lack neither completeness nor interest.

The American Art School has come into existence, not for the purpose of creating galleries of rare and costly paintings, engravings, and sculptures which shall furnish the conservatories of the rich, but rather to give such elementary instruction as shall quicken invention in the arts of design, and make a common possession which America regards as directly useful to all instead of a luxury designed to distinguished caste.

Since Professor Halsey C. Ives, of the Washington University, has been selected as Director of the display of Fine Arts at The World's Columbian Exposition, it is reasonable to infer his policy as Director of the Exposition from that which he has pursued as Director of the Museum of Fine Arts. The school under his direction has sought instruction in the elementary principles of Art, and the Museum has been used to bring together not the costly works of Meissonier, Bougereau and Verestchagin, but rather to gather such paintings and castes as might be of direct

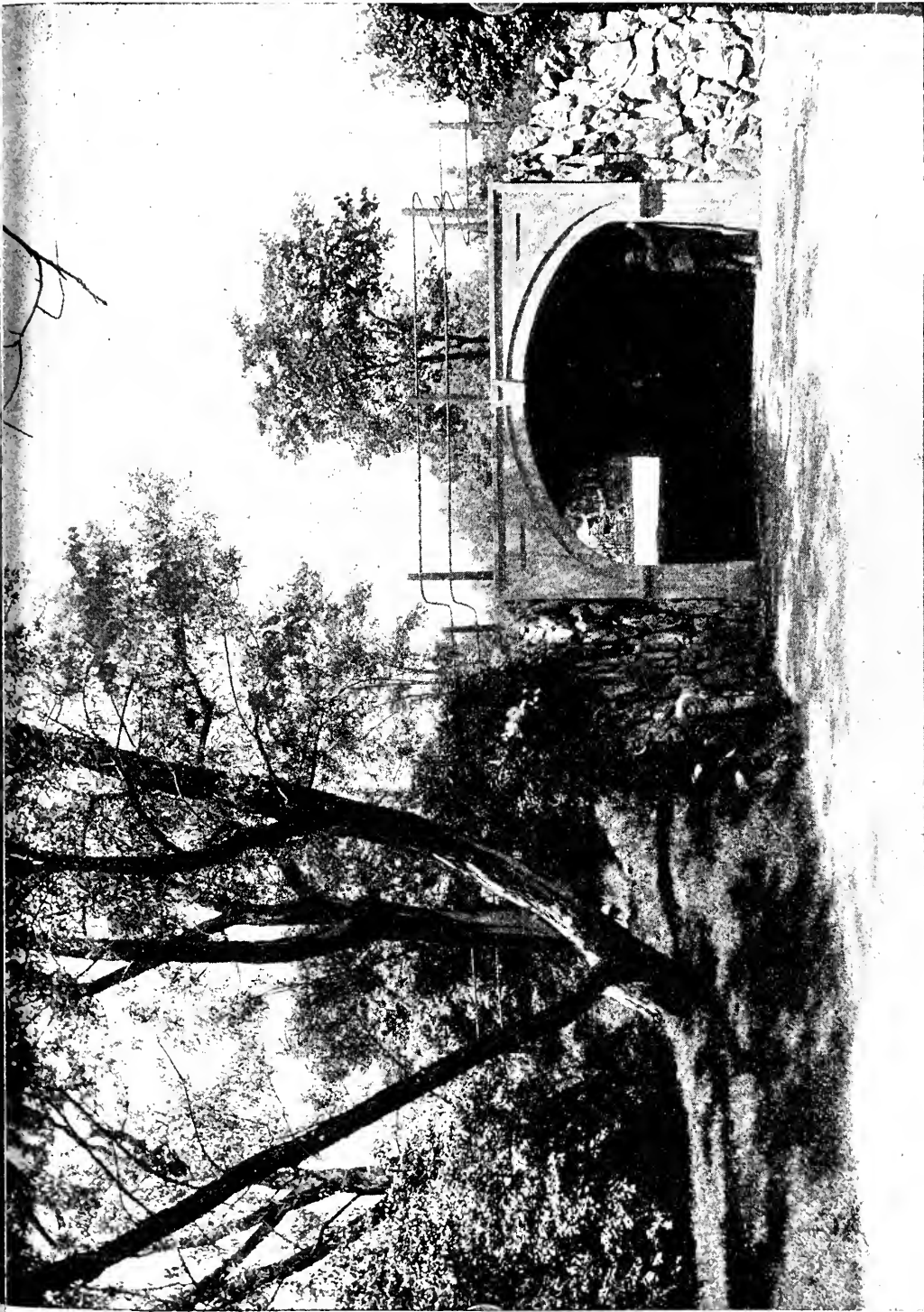
benefit to the art student. Professor Ives deserves the highest honor for availing himself of forces excited to activity by the labors of Dr. William T. Harris and his fellow-workers in what during its existence was known as The Art Society, and for creating with these a great Art School and Museum. But a merit quite as great is his, for he was sufficiently prescient to realize that for the truest success of Art its interests must be identified with that of the artisan, so that constant effort has been made to so present the artistic success of Europe as to stimulate the activity of designers who are specially liable to err by conventionality in a country in which mechanism plays so important a part.

Professor Ives has frequently visited Europe to inspect the treasures of her galleries; he is so familiar with the history of development in Art, that we may safely assume that at The World's Columbian Exposition the visitors will be delighted by paintings which, however varied in theme, will be alike in real excellence, while at the same time they cannot fail of being instructed by an arrangement calculated to show at a glance the many weary steps trodden by Art in passing from its infancy to the masterpieces of the world's galleries.

The display at Philadelphia, it will be remembered, occupied an Annex; and indeed, the character of the collection led many to believe that the Art Gallery was merely an after-thought. At Chicago, Art will be given her proper recognition, and the connoisseur, the artisan, and the pleasure-seeker will each be provided for.

There will be four sub-divisions: I., The History of Man; II., The Liberal Arts; III., Arts and Crafts; IV., Means of Transportation.

Under the first heading will be furnished the workshops



ARCHWAY IN LINCOLN PARK.



of the three ages, called by students The Age of Stone, The Age of Bronze, and The Age of Iron. There will likewise be reproductions of the ancient Chinese industry in cloisorme, and of the Greek manufacture of pottery.

Under the second heading, Director Halsey C. Ives will undertake to represent the development of painting, sculpture and architecture—the materials used and the results achieved in each period. Such plans and measurements as are useful to the artisan in contrast with the artist, will be a prominent feature. Of course the claims of æsthetics will not be ignored, and visitors may be sure that we shall have no repetition of the Centennial art gallery, which was caviare to the lover of art, and wholly useless for technical suggestion.

The History of Music and that of the Drama will likewise be presented in this exhibit, so that while thoroughly instructive to the one who comes to learn, it cannot but have the liveliest interest for the mere “looker-on in Vienna.”

Under the third heading will be developed the history of arts and crafts.

Under the fourth heading will be exhibited in the order of their evolution, every known means of transportation—roads, bridges, canals, wharves, railways, carriages, coaches, vehicles, balloons, motors; while such auxiliaries as light-houses, toll-houses, etc., will not be found absent.

In the spring of 1864 I had the chance of spending many days in the Uffizj on the study of its several collections. Statues and pictures I found ranged and classed, as all the world knows they are, with full care and excellent sense; but one precious division of the treasury was then, and I believe is still, unregistered in catalogue or manual. The huge mass of original designs,

in pencil or ink or chalk, swept together by Vasari and others, had then been but recently unearthed and partially assorted. Under former Tuscan governments this sacred deposit had lain unseen and unclassified in the lower chambers of the palace, heaped and huddled in portfolios by the loose stackful. A change of rule had put the matter at length into the hands of official men gifted with something more of human reason and eyesight. Three rooms were filled with the select flower of the collection acquired and neglected by past Florentine governors. Each design is framed, glazed, labelled legibly outside with the designer's name: the arrangement is not too far from perfect for convenience of study. As there can be no collection of the kind more rich, more various, more singular of interest, I supplied for myself the want of a register by taking hasty memorial notes of all the important designs as they fell in my way. They are not ranged in any order of time, nor are all a painter's drawings kept together; some have samples scattered about various corners of different rooms, but all accessible and available. Space there is even bounded, and valued accordingly. In the under chambers there still remain piles of precious things but partially set in order. To these the public visitor has not access; but through the courtesy of their guardian I was offered admission, and shown by him through the better part. There are many studies of the figure by Andrea del Sarto which deserve and demand a public place; others also of interest which belong to the earlier Florentine school; many nameless but some recognizable by a student of that time of art. In such studies as these the collection is naturally richest; though, as will at once be seen, not poor in samples of Milanese or Venetian work. The fruitful vigor, the joyous and copious effusion

of spirit and labor, which makes all early times of awakening art dear to all students and profitable to all, has left noble fragments and relics behind, the golden gleanings of a full harvest. In these desultory notes I desire only to guide the attention to what seems worthiest of notice, without more form of order than has been given by the framers and hangers; taking men and schools as they come to hand, giving precedence and prominence only to the more precious and significant. For guide I have but my own sense of interest and admiration; so that, while making the list of things remarkable as complete and careful as I can, I have aimed at nothing further than to cast into some legible form my impression of the designs registered in so rough and rapid a fashion; and shall begin my transcript with notices of such as first caught and longest fixed my attention.

Of Leonardo the samples are choice and few; full of that indefinable grace and grave mystery which belong to his slightest and wildest work. Fair, strange faces of women full of dim doubt and faint scorn, touched by the shadow of an obscure fate; eager and weary, as it seems, at once, pale and fervent with patience or passion,—allure and perplex the eyes and thoughts of men. There is a study here of Youth and Age meeting; it may be, of a young man coming suddenly upon the ghostly figure of himself as he will one day be; the brilliant life in his face is struck into sudden pallor and silence, the clear eyes startled, the happy lips confused. A fair, straight-featured face, with full curls fallen or blown against the eyelids; and confronting it, a keen, wan, mournful mask of flesh: the wise, ironical face of one made subtle and feeble by great age. The vivid and various imagination of Leonardo never fell into a form

more poetical than in this design. Grotesques, of course, are not wanting; and there is a noble sketch of a griffin and lion locked or dashed together in the hardest throes of a final fight, which is full of violent beauty; and again, a study of the painter's chosen type of woman; thin-lipped, with a forehead too high and weighty for perfection or sweetness of form; cheeks exquisitely carved, clear, pure chin and neck, and grave eyes full of a cold charm; folded hands, and massive hair gathered into a net; shapely and splendid as a study for Pallas or Artemis.

Here, as in his own palace, and wherever in Florence the shadow of his supreme presence has fallen and the mark of his divine hand been set, the work of Michel Angelo for a time effaces all thought of other men or gods. Before the majesty of his imperious advent the lesser kings of time seem, as it were, men bidden to rise up from their thrones, to cover their faces and come down. Not gratitude, not delight, not sympathy, is the first sense excited in one suddenly confronted with his designs; fear, rather, oppressive reverence, and well nigh intolerable adoration. Their tragic beauty, their inexplicable strength and wealth of thought, their terrible and exquisite significance,—all the powers they unveil and all the mysteries they reserve, all their suggestions and all their suppressions, are at first adorable merely. Delightful beyond words they become in time, as the subtler and weightier work of Æschylus or Shakespeare; but like these, they first fill and exalt the mind with a strange and violent pleasure which is the highest mood of worship; reverence intensified to the last endurable degree. The mind, if then it enjoys at all or wonders at all, knows little of its own wonder or its own enjoyment; the air and light about it is too fine and pure to breathe or bear. The

least thought of these men has in it something intricate and enormous, faultless as the formal work of their triumphant art must be. All mysteries of good and evil, all wonders of life and death, lie in their hands or at their feet. They have known the causes of things, and are not too happy. The fatal labor of the world, the clamor and hunger of the open-mouthed, all-summoning grave, all fears and hopes of ephemeral men, are indeed made subject to them, and trodden by them under foot; but the sorrow and strangeness of things are not lessened because to one or two their secret springs have been laid bare, and the courses of their tides made known; reflux evil and good, alternate grief and joy, life inextricable from death, change inevitable and insuperable fate. Of the three, Michel Angelo is saddest; on his, the most various genius of the three, the weight of things lies heaviest. Glad or sad as the days of his actual life may have been, his work in the fullness of its might and beauty, has most often a mournful meaning, some grave and subtle sorrow latent under all its life. Here in one design is the likeness of perishable pleasure; Vain Delight, with all her children; one taller boy has drawn off a reverted and bearded mask, on which another lays hold with one hand, fingering it as with lust or curiosity; his other hand holds to the mother's knee; behind her a third child lurks and cowers; she, with a hard, broad smile of dull pleasure, feeds her eyes on the sight of her own face in a hand-mirror. Fear and levity, cruelty and mystery, make up their mirth; evil seems to impend over all these joyous heads, to hide behind all these laughing features; they are things too light for hell, too low for heaven; bubbles of the earth, brilliant and transient and poisonous, blown out of unclean foam by the breath of meaner spirits, to glitter

and quiver for a little under the beams of a mortal sun. Cruel and curious and ignorant, all their faces are full of mean beauty and shallow delight. Hard by, a troop of Loves haul after them, with mocking mouths and straining arms, a live human mask, a hollow face shorn off from the head, old and grim and sad, worn through and and through with pain and time, from the vexed forehead to the sharp chin, which grates against the ground; the eyes and lips full of suffering, sardonic and helpless; the face of one knowing his fate, who has resigned himself sadly and scornfully to the violence of base and light desires; the grave and great features all hardened into suffering and self-contempt.

But in one separate head there is more tragic attraction than in these: a woman's, three times studied, with divine and subtle care; sketched and re-sketched in youth and age, beautiful always beyond desire and cruel beyond words; fairer than heaven and more terrible than hell; pale with pride and weary with wrong-doing; a silent anger against God and man burns, white and repressed, through her clear features.

In one drawing she wears a head-dress of eastern fashion rather than western, but in effect made out of the artist's mind only; plaited in the likeness of closely welded scales as of a chrysalid serpent, raised and waved and rounded in the likeness of a seashell. In some inexplicable way all her ornaments seem to partake of her fatal nature, to bear upon them her brand of beauty fresh from hell; and this through no vulgar machinery of symbolism, no serpentine or otherwise bestial emblem: the bracelets and rings are innocent enough in shape and workmanship; but in touching her flesh they have become infected with deadly and malignant meaning. Broad bracelets divide

the shapely splendor of her arms ; over the nakedness of her firm and luminous breasts, just below the neck, there is passed a band as of metal. Her eyes are full of proud and passionless lust after gold and blood ; her hair, close and curled, seems ready to shudder in sunder and divide into snakes. Her throat, full and fresh, round and hard to the eye as her bosom and arms, is erect and stately, the head set firmly on it without any droop or lift of the chin ; her mouth crueller than a tiger's, colder than a snake's, and beautiful beyond a woman's. She is the deadlier Venus incarnate, for upon earth also many names might be found for her : Lamia re-transformed, invested now with a fuller beauty, but divested of all feminine attributes not native to the snake,—a Lamia loveless and unassailable by the sophist, readier to drain life out of her lover than to fade for his sake at his side ; or the Persian Amestris, watching the only breasts on earth more beautiful than her own cut off from her rival's living bosom ; or Cleopatra, not dying but turning serpent under the serpent's bite ; or that queen of the extreme East, who with her husband marked every day as it went by some device of a new and wonderful cruelty. In one design, where the cruel and timid face of a king rises behind her, this crowned and cowering head might stand for Ahab's, and her's for that of Jezebel. Another study is in red chalk ; in this the only ornaments are ear-rings. In a third, the serpentine hair is drawn up into a tuft at the crown with two ringlets hanging, heavy and deadly as small tired snakes. There is a drawing in the furthest room at the Buonarroti Palace, which recalls and almost reproduces the design of these three. Here also the electric hair, which looks as though it would hiss and glitter with sparks if once touched, is wound up to a tuft with serpentine plaits and involutions ; all that

remains of it unbound falls in one curl, shaping itself into a snake's likeness as it unwinds, right against a living snake held to breast and throat. This is rightly registered as a study for Cleopatra; but notice has not yet been accorded to the subtle and sublime idea which transforms her death by the asp's bite into a meeting of serpents which recognize and embrace, an encounter between the woman and the worm of Nile, almost as though this match for death were a monstrous love-match, or such a mystic marriage as that painted in the loveliest passage of *Salammbô*, between the maiden body and the scaly coils of the serpent and the priestess alike made sacred to the moon; so closely do the snake and the queen of snakes caress and cling. Of this idea Shakespeare also had a vague and great glimpse when he made Antony murmur, "*Where's my serpent of old Nile?*" mixing a forecaste of her death with the full sweet savor of her supple and amorous "pride of life." For what indeed is lovelier or more luxuriously loving than a strong and graceful snake of the noblier kind?

After this the merely terrible designs of Michel Angelo are shorn of half their horror; even the single face as of one suddenly caught and suddenly released from hell, with wild drapery blown behind it by a wind not of this world, strikes upon the sight and memory of a student less deeply and sharply. Certain of his slight and swift studies for damned souls and devils—designs probably for the final work in which he has embodied and made immortal the dream of a great and righteous judgment between soul and soul—resemble much at first sight, and more on longer inspection, the similar studies and designs of Blake. One devil indeed recalls at once the famous "ghost of a flea," having much of the same dull and

liquorish violence of expression. Other sketches in the small chamber of his palace bring also to mind his great English disciple: the angry angel poised as in fierce descent; the falling figure with drawn-up legs, splendidly and violently designed; the reverted head showing teeth and nostrils; the group of two old men in hell; one looks up howling, with level face; one looks down with lips drawn back. Nothing can surpass the fixed and savage agony of his face, immutable and imperishable. In this same room are other studies worth record; a Virgin and Child, unfinished, but of supreme strength and beauty; the child fully drawn, with small strong limbs outlined in faint red, rounded and magnificent; soft vigorous arms, and hands that press and cling. There is a design of a covered head, looking down; mournful with nervous mouth, with clear and deep-set eyes; the nostril strong and curved. Another head, older, with thicker lips, is drawn by it in the same attitude.

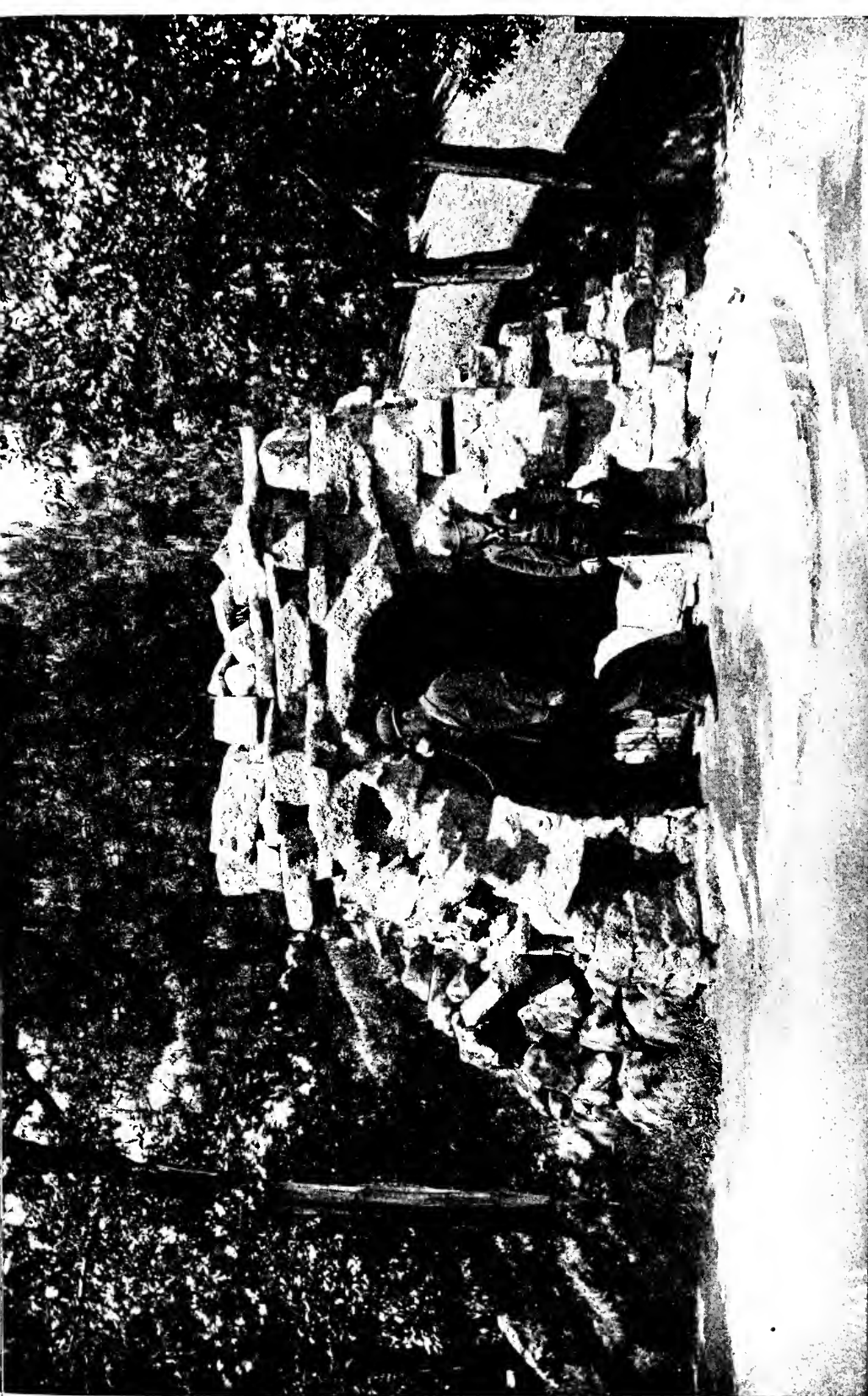
Beside the Jezebel or Amestris of the Uffizj there is a figure of Fortune, with a face of cold exaltation and high, clear beauty; strong wings expand behind her, or shadows rather of vast and veiled plumes; below her the wheel seems to pause, as in a lull of the perpetual race.

This design was evidently the sketch out of which the picture of Fortune in the Corsini Palace was elaborated by some pupil of the master's. In that picture, as in the Venus and Cupid with mystic furniture of melancholy masks and emblems in the background, lodged now in the last Tuscan chamber but one of the Uffizj, the meaner hand of the executive workman has failed to erase or overlay the great and fruitful thought of that divine mind in which their first conceptions lay and gathered form. The strong and laughing god treading with a vigorous

wantonness the fair flesh of his mother; the goddess languid and effused like a broad-blown flower, her soft bright side pressed hard under his foot and nestling heel, her large arm lifted to wrest the arrow from his hand, with a lazy and angry mirth; and at her feet the shelves full of masks, sad inverted faces, heads of men overset, blind strings of broken puppets forgotten where they fell; all these are as clearly the device of Michel Angelo's great sad mind as the handiwork is clearly none of his. Near the sketch of Fortune is a strange figure, probably worked up into some later design. A youth with reverted head, wearing furry drapery with plumy fringes, has one leg drawn up and resting on a step; the face, as it looks back, is laughing with fear; the hysterical horror of some unseen thing is branded into the very life of its fair features. This violent laugh as of a child scared into madness subjects the whole figure, brilliant and supple in youth as it seems, to the transformation of terror. Upon this design also much tragic conjecture of allegory or story might be spent, and wasted.

There are here no other sketches so terrible, except one of hell, by Luca Signorelli, rough and slight in comparison: a fierce chaos of figures fighting, falling, crushing and crushed together; their faces hissed at and their limbs locked round by lithe snakes; their eyes blasted and lidless from the hot wind and heaving flame; one lost face of a woman looks out between two curving bat's wings, deadlier than the devils about her, who plunge and struggle and sink.

The sketches of Filippo Lippi are exquisite and few. One above all, of Lucrezia Buti, in her girlhood, as the painter found her at Prato in the convent, is of a beauty so intolerable that the eyes can neither endure nor abstain



WATER FROM THE ROCKS, LINCOLN PARK.



from it without a pleasure acute even to pain which compels them to cease looking, or a desire which, as it compels them to return, relapses into delight. Her face is very young, more faultless and fresher than the first forms and colors of morning; her pure mouth small and curved, cold and tender; her eyes, set with an exquisite mastery of drawing in the clear and gracious face, seem to show actual color of brilliant brown in their shapely and lucid pupils, under their chaste and perfect eyelids; her hair is deeply drawn backwards from the sweet, low brows and small rounded cheeks, heaped and hidden away under a knotted veil, whose flaps fall on either side of her bright, round throat. The world has changed for painters and their Virgins since the lean school of Angelico had its day and its way in art; this study assuredly was not made by a kneeling painter in the intervals of prayer. More vivid, more fertile, and more dramatic than Lippo, the great invention and various power of Benozzo never produced a face like this. For pure and simple beauty it is absolutely unsurpassable; innocent enough also for a Madonna, but pure by nature, not chaste through religion. No creeds have helped to compose the holiness of her beauty. The meagre and arid sanctities of women ascetic by accident or abstemious by force have nothing in common with her chastity. She might be as well a virgin chosen of Artemis as consecrated to Christ. Mystic passions and fleshless visions have never taken hold upon her sense or faith. No flower and no animal is more innocent; none more capable of giving and of yielding to the pleasure that they give. Before the date of her immortal lover, there was probably no artist capable of painting such a thing at all; and in none of his many paintings

does the stolen nun look and smile with a more triumphant and serene supremacy of beauty.

There are two studies of the Holy Family by Lippo in these rooms; the one nearest the separate head of Lucrezia is a sketch for the picture above the doorway in the far small room filled with works of the more ancient masters only. The St. John in this sketch is admirable for fat strength and childish character; and the entire group, in outline as in color, full of that tender beauty combined with vigorous grace of which this great painter never fails. The second study is more curious; the child lies between the mother's and a nurse's hands; a large book lies open on a broad straw chair, and a tall boy leans upon the chair and watches. The attempted realism here is as visible as in the other is a voluntary subjection to conventional habit and the beauty of prescription. Near the first group are some small studies of separate figures; two of boys, very beautiful. One, a school-boy or chorister, seemingly, is seated on a form, and clothed in a long, close gown; his face, grave and of exquisite male beauty, looking down as if in pain or thought; from some vessel at his feet rises a thick column of lighted smoke. Another boy with full curled hair is drawn as walking close behind.

Of Sandro Botticelli the samples are more frequent; and in these simple designs the painter is seen at no disadvantage. The dull and dry quality of his thin, pallid coloring can here no longer impair the charm of his natural grace, the merit of his strenuous labor. Many of his single figures are worthy of praise and study: the head of a girl with gathered hair; the figure of a youth raised from the dead; that of an old man with a head like a satyr's. Two groups not far apart may be used as

studies of his various power and fancy. The first, of two witches loosely draped, not of the great age common to their kind ; one stirs and feeds the fire under a caldron of antique fashion and pagan device ; one turns away with a hard, dull smile, showing all her wolfish teeth. The second, of a tuft of marsh-lilies midway on a steep and bare hillside ; under them, where the leaves and moistened earth are cool from the hidden well-head, a nymph lies deeply asleep ; Cupid, leaning and laughing over her with a clear and crafty face, presses one hand upon her bosom while the other draws out an arrow. The design is full of fresh beauty, a sense of light and wind and fragrant high-lying land. A Virgin with veil bound up is among the gracefulest and purest of his many studies in that kind.

Here also is a sketch for the single figure of Venus, seemingly the one sold in England in 1863, with no girdle of roses round the flanks ; not the lovelier or likelier Venus of the two. Another careful satyr-like head suggests the suppressed leaning to grotesque invention and hunger after heathen liberty which break out whenever this artist is released from the mill-horse round of mythologic virginity and sacred childhood ; in which at all times he worked with such singular grace and such ingenuity of pathetic device. A sample of his religious manner is the kneeling angel with parted lips and soft, fair face ; another, the figure of St. John wrapped in skins. Among the unregistered designs here is one, evidently a study for the male figure in Botticelli's beautiful and battered picture of Spring ; beautiful for all its quaintness, pallor, and deformities. The sketched figure is slightly made, with curling hair, and one hand resting by the hip ; the tree to which in the picture he turns and reaches after fruit is not here given. Among others which may belong to this

painter is the sketch of a heavy, beardless mask, with fat regular features, round chin, and open lips ; an older face, three-quarters seen, with a sick and weary look in the lips, with eyes and cheeks depressed ; a child's head, large, sharp though round, studied evidently and carefully from the life ; the mouth curved, with long lips ; an old profile, aquiline and small ; and a head somewhat resembling that of Blake, bald, but with curling hair on the temples ; with protuberant brow and protrusive underlip, the chin also prominent. In all these is the same constant and noble effort to draw vigorously and perfectly, in many the same faint and almost painful grace, which give a distinct value and a curious charm to all the works of Botticelli.

The splendid and strong fertility of Filippino Lippi, unequalled save by that of Benozzo, has here borne much noble fruit. His numerous sketches are ranged in different rooms, far apart from each other, among various samples of his own school and time, and may be noted at random, single figures and larger groups alike. The artist had less gift of reproducing physical beauty, less lyric loveliness of work, less fulness of visible and contagious pleasure in his execution, than his father ; but far more of variety, of flexible emotion, of inventive enjoyment and indefatigable fancy. From the varied and vagrant life of the elder these qualities might rather have been expected to develop in him than in his son ; but if Lippo is more of a painter, Lippino is more of a dramatist. To him apparently the sudden varieties and resources of secular art becoming visible and possible conveyed and infused into his work a boundless energy of delight. Much may be traced to his master Botticelli ; more to the force of a truly noble blood inherited from the monk and

nun his parents, glorious above all their kind for beauty, for courage and genius ; most of all to the native impulse and pliancy of his talent. From his teacher we may derive the ambition after new things, the desire of various and liberal invention, the love of soft hints and veiled meanings, with something now and then of the hard types of face and form, the satisfaction apparently found in dry conventional faults, which disfigure the beauty of Botticelli's own pictures. With these types, however, he was not long content ; no faces can be fuller of a lovely life and brilliant energy than many of Lippino's ; and his father's incomparable sense of beauty could not but have preserved from grave or continual error even a son who had not inherited and acquired so many and such noble powers. It is singular that some of the faultiest and most favorite types of his master reappear in the late frescoes of Lippino, which add even to the church of Santa Maria Novella new glory and beauty. In those two great pictures of martyrdom and miracle there are faces suggestive of overmuch leather and bony outline, such as Botticelli, in the violent pursuit of realism, too often allowed himself to design for the sake of genuine expression and physical fidelity. Whereas, in Lippino's earlier and greater frescoes at the Carmine, there is no shortcoming of the kind. A fair sample of the somewhat lean and fleshless beauty, worn down, it seems, by some sickness or natural trouble, rather than by any ascetic or artificial sorrow, in which Botticelli must have taught his pupil to take pleasure, is here in the veiled head of Simonetta, thin-faced, with small, sharp features, bright, intent eyes, and rippling hair ; a model, it will be remembered, dear to the teacher of Lippino. Scarcely less in the manner of his master is the figure of an angel waiting by a door, or the group of

witches and beggars, full of fierce tumultuous grace. Near these is the strange typical figure of a woman holding what seems some armorial blazon on a scroll in her hand; her face is also thin, fierce, and hesitating; some doubtful evil, some mystery of a witch's irresolute anger, is half expressed and half suppressed by her features and action. If, indeed, she was meant simply for the presiding genius of a family or some allegoric spirit about to proclaim their titles, the artist has contrived to give her rather the aspect of a sorceress who holds their house in her hand, a Sidonia, ready to destroy their hope of generation by a single spell. Especially will she recall the heroine of Meinhold to those who have seen Mr. E. Burne Jones' nobler drawing of the young Sidonia wearing a gown whose pattern is of branching and knotted snakes, black upon the golden stuff; for the garment of this witch also is looped up and brooched with serpents.

Not far off is the figure of a youth, turbaned, with both hands clasping a staff; his face that of one suddenly startled; noticeable, as are all these smaller studies, for graceful and individual character. Two larger sketches in the same room seem to be either parts of a single story or dubious and tentative studies taken while the artist had not made up his mind how to work and what to work upon. In the one, Cupids discover a knight sleeping in some dim, spell-bound place; with soft laughter, with silent feet and swift fingers, they draw off his armor and steal away the sword and helmet, leaving his head bare to the dew and wind of that strange twilight. In the other division, parted off by a mere rough line drawn across the paper, a knight, armed and newly landed from a ship just inshore, finds a maiden asleep under the sea-rocks; in the low sky behind the ship

a faint fire of dawn has risen, and touches the shadowed shore and the dissolving clouds with growing and hesitating light. The design was not improbably made for a picture of Bacchus and Ariadne; it has the cold and lucid beauty of an older legend translated and transformed into mediæval shape. More than any others, these painters of the early Florentine school reproduce in their own art the style of thought and work familiar to a student of Chaucer and his fellows or pupils. Nymphs have faded into faries, and gods subsided into men. A curious realism has grown up out of that very ignorance and perversion which seemed as if it could not but falsify whatever thing it touched upon. The study of Filippino's has all the singular charm of the romantic school which remains alike remote from pure tradition and allegoric invention. This clear form has gone, the old beauty dropped out of sight; no freshness and fervor of no significance has come to supply it; no memory and new desire has begun to reach back with studious eye and reverted hands towards it, as towards some purer and fuller example of art than any elsewhere obtainable; but the mediæval or romantic form has an incommunicable charm of its own. False and monstrous as are the conditions and the local coloring with which it works, the forms and voices of women and men which it endeavors to make us see and hear are actually audible voices and visible forms. Before Chaucer could give us a Pandarus or a Cressida, all knowledge and memory of the son of Lycaon and the daughter of Chryses must have died out, the whole poem collapsed into romance; but far as these may be removed from the true tale and the true city of Troy, they are not phantoms; they tread real earth and breathe real air, though it be not in Greece or Troas.

Discrowned of epic tradition, dispossessed of divine descent, they are not yet wholly modern, not yet degraded and deformed into base and brutish likeness by the realism and the irony of Shakespeare. Divine they are no longer, but not as yet merely porcine and vulpine. So it is with such designs as this Ariadne, if Ariadne it be; they belong to the same age, almost to the same instant, of transition. Two great samples exist of this school among painters: the Birth of Venus by Sandro Botticelli, the death of Procris by Piero di Cosimo. Of Filippino's sketch the chief charm lies in a dim light of magic morning mixed with twilight, and shed over strange seas and a charmed shore. No careful and grateful student of this painter can overlook his special fondness for seashores; the tenderness and pleasure with which he touches upon the green opening of their chines or coombs, the clear low ranges of their rocks. Two admirable pictures in Florence bear witness to this: in the Uffizj his great Adoration of the Magi, where beyond the farthest meadows and behind the tallest trees far-off downs and cliffs open seaward, and farther yet pure narrow spaces intervene of gracious and silent sea; and in the Pitti his small similar landscape of the Nativity, where adoring angels rain roses after roses over mother and child; and outside a close fence of interwoven rose-bushes the sweet and various land breaks down to a green clear shore after miles of rock and watery field. But that something of the same fondness is perceptible in Botticelli (especially in the background of his Venus, and in a very small picture at the Academia of St. Augustine and the child-angel, where infinite quiet capes and headlands divide bay from receding bay), it might be imagined that with the blood of a father who had roved and labored perforce by

sea Filippino had inherited some salt relish of the pure wide water and various shore unknown to the placid inland painters of his age content as cattle or sheep with the valley and the field. To him, therefore, rather than to Filippo, in whom this note of preference is not so perceptible, must on all accounts be assigned the honor—for to either it must be an additional honor—of having painted the Holy Family in the Corsini Palace, where children made music on strange instruments, and in the background low broken rocks enclose and reveal cold inlets and quiet reaches of the sea. The color and manner too seem altogether those of Lippino.

His finest study here of a single figure is in another part of the room; a beautiful head of a youth bent sideways, with curls blown back and eager, joyful eyes under lifted brows and eyelids; the lips parted with eloquent and vehement expression of pleasure; his cloak is loose, but the collar close about the round and splendid column of his throat; the mouth seems indeed to talk, the hair to vibrate, the eyes to glitter. Near it is a group also noticeable, a boy seated and reaching out both arms towards a girl near by; full of vivid grace and action. Here, too, is a long narrow drawing for an architectural facade; in a niche St. Martin, and the beggar who holds the cloak for the saint to cut; the design is active and careful, capable of being put to noble use in fresco or sculpture.

Another slight sketch suffices to show the power and enjoyment of a great artist; the bull which has borne Europa far out into mid-sea, looking back with reverted horn and earnest eye, plunges on ahead through a dim swell of obscure and heaving water. No land is in sight, and no sky given; the faint full wave of outer sea, be-

yond roller or breaker, is dimly seen to sweep and heave in continuous moving outline. A design apparently for the story of Phaeton (or more probably, as I now think, of Hippolytus) has the same kind of mediæval realism as that of Ariadne; four horses plunge violently forward, whirling after them charioteer and chariot; one alone turns backward his reinless neck in angry liberty; a man hard by, staff in hand, warns eagerly and vainly with hopeless hand and voice. Near this is a noble figure of Fear; the spirit or god of this passion, attired in red, with hair loose under a cap lightly set on; in his hand a bow without a bow-string; the whole form and face violently afraid, terrified even to passion. In the second are two other remarkable studies assigned to Filippino; one of a woman with low fat eyelids, round bare forehead, and cheeks with the hair drawn well off, and a short, strained throat. The other, a composition of three figures; one, with a cap half covering his curls, seems to remonstrate; one, turning away, rests his foot sideways on a stool, showing the sole; a third, with face and left arm raised together, grasps a stool in his right hand. The story or sense of this design may be conjectured by those who have time or taste for such guess-work.

The studies by Paolo Uccello give proof in the main rather of his laborious care and devout desire to work well than of his rare and vigorous fancy. Separate heads and figures of his drawing recur in more than one division; one at least is worth a second look; an ancient close-capped head, with ear bent up as by continuous pressure upon it of knight's helmet or citizen's bonnet; the eye bright, and the neck thick; the mouth, with underlip thrust out, expressive of a sick and scornful fatigue; a portrait seemingly of some one overworked by thoughtful



TRANSPORTATION BUILDING.



or active life; an old man of great strength now wearing weak. Other figures, less suggestive, are not less vigorous in design: studies of men wrestling and sleeping, and two or three of a boy wrought evidently after the same model, various in grace of attitude; now setting and now kneeling, and again seen from behind leaning on a spear, holding one foot with his hand, the full drapery drawn with skill and labor. Among other such academic studies we may notice that of a naked man, bony and sinewy in build of figure, seated on a narrow chair and holding out at arm's length a spear or staff. The woman resting against another chair is singularly beautiful for an artist who seems oftener to have painted men and animals in scenes of war or labor. Two other woman are sitting near; another drawing of the same man shows him sitting on the ground and clasping his knees. There is yet another study of wrestlers, one lifting the other back to back with a violent grace of action. In a small drawing of a boy watching some beast feed, which may be a rabbit or not, the boy's head recalls a noticeable head by Benozzo in the group of singing angels near the altar of the Riccardi chapel; a head full-curved, open-mouthed, showing the teeth bare; suddenly recalling the more grotesque manner of Blake in the midst of those fair, smooth faces of serene and joyous angels. Two more of these sketches may here be set down; one of a child, swift and slight; one of the Moorish king Balthazar, bearing his gifts for Christ. All these, however graceful and good, are simply sketched for the sake of such draperies and postures; elsewhere the man's strong fancy and freshness of invention stand more visibly forward. His finest sketch here given is a design which recalls Chaucer's tale of three robbers, who seeking for Death to slay him are

directed by an old man to a field where lies a great heap of treasure; the two elder send the youngest for wine, that they may drink together to their good luck, and when left alone devise to slay him on his return and share the spoil; meantime he buys them poison for wine, being mindful of past violences, and covetous as they of the treasure; he returning is stabbed, and his murderers drink and die; and thus all three overtake the death they sought. In this drawing of Paolo's three men lie dead in a wide, woody field; the youngest in front, turned half over on his face as one who has died hard; the two others rigid and supine, with faces upturned to the bleak heaven, as men slain by sudden judgment.

The rare trees growing in this fatal field of blood, a barren and storm-swept Aceldama, are bare of limb and worried with wind, blown out of shape and vexed with violent air; not a bird or beast has here place to feed or sing, but a gray and drifted roof of cloud leaves dark the shaken grass and haggard trees.

Piero di Cosimo has not here more than three or four drawings; not, however, mere studies after models, but composition marked with the strong romantic invention, the subtle questionable grace, which more or less distinguish at all times from his fellows the painter of Procris and Andromeda. Here the sacred dove is seen poising over the heads of children at prayer, two holding an open book, others bearing lilies; a design of the pure, blind pleasure of worship.

There a saint enters the desolate Thebaid with almost smiling face, the smile controlled by sadness, and the sadness lighted by a smile; he is high up already in the waste land, full of storms and stream; the pine and the poplar are wasted with wind, the ground covered as

with stones of stumbling and rocks of offense; only higher yet on a ledge of the hillside under lee of the pine-wood a hermit's cottage hangs over the one barren path that winds among bleak spaces and windy solitudes. No modern realist has excelled in quaint homeliness of device Piero's study of a Nativity. The sacred group of mother, child and angel is gathered together in a farm-house room; of this group the angel supporting the new-born child in his arms is the most graceful figure; the ox looking on has an air of amusement, not of the reverence improper to brute nature; amused possibly at the lodging chosen for it by an artist whose neglect of the traditional manger is a sample of his eccentric scorn of traditions. The window of this room looks out on a low-land at sunrise, coldly lighted by the clear, level morning new-born with the birth of Christ. The subject of another study I have not guessed at. Before a judge in round cap and eastern robe stands a girl averting her eyes from a Jew-faced man with silk sash and high hat, who is in act (it seems) to draw a dagger from his sleeve; her expression that of a disdainful desire for death rather than shame; to her, on the other hand, a plumed knight seems eagerly to appeal; his face is distinct in character, with small, sharp upper lip and large chin. The girl may be a martyr standing before her judge for her faith's sake, between the lover she renounces and the traitor she abhors; or the subject may simply be taken from some mediæval legend of adventurous constancy; it is assuredly graceful and vital as a piece of work.

There are a few designs of either Pollajuolo; by Piero, a fine head, wrinkled and sullen; a youth with clasped hands in grinning agony of fear, the lips convulsed and

sharpened by the rapid spasm ; by Antonio, an angel's or virgin's head, over-sweetened into a look of dulcet devotion, but graceful in its fashion ; a lady lightly veiled and sharply smiling, with ringlets on the neck and the main mass of hair plaited up behind ; groups of saints and virtues, chief among them Justice and Prudence with serpents emblematic of wisdom ; a fight of Centaurs and Lapithæ ; male studies, for his picture of St. Sebastian in the National Gallery ; one in half-length stripped naked and seeming to appeal, and one of ruffianly feature looking upwards as though after the flight of his arrow ; and a singular allegoric design, in which fortune from a platform shakes gold into the hands of an infant, borne in the arms of a man weeping aloud and violently, while another child clings to his leg ; a winged boy leaning on a bar looks up to the group and laughs ; his light glad spiritual scorn ; the blind, bright indifference of the goddess who gives and the infant who receives gold, the loud agony of the grown man, on whom, though bearing in his very hands the chosen of fortune, no flake of the golden rain has fallen ; the helpless adherence of the slighted older child ; all these are touched with rough suggestive rapidity, and share with many others the chief charm of these studies ; that gift, namely, which they give us, of ability to see for a little the passage of swift thoughts and flying fancies across fruitful minds of masters whose daily work was cut out something too much on one pattern, exclusive, therefore, of new device and mobile invention. Near this is what seems a portrait drawing of a boy seated, thinking hard, unhand-some, with long mouth, powerful and grave.

Like others of the minor masters, Alessio Baldovinetti shows here more capacity of thought and work in slight

studies than in large pictures, where his touch is thin and his work sterile. His Deposition from the Cross is fine enough to surprise at first sight, fresh and not feeble, inventive even, as in the action of the boy assisting. Another group by the same hand is forcible and expressive; two men, with faces full of busy passion, meet and exchange rapid looks; the one with hands clasped, the other about to mount a step on which his foot already rests, with elbow on knee and cheek on hand; hard by waits an attendant with a short pike, and near him a torturer or hangman, with the tools of his trade. This design is probably a sketch to be worked up in some picture of martyrdom; its dramatic and distinct intention strikes and attracts at once. By Taddeo Gaddi is a noticeable drawing of the meeting of Elizabeth and Mary; noticeable mainly for its background of rocky, barren highland, with lean trees rising behind the low, quaint house whence the elder woman has come forth in glad reverence and eager welcome. Of Mantegna there are but few samples, grouped mainly with those of Botticelli near the entrance of the first room; a design of the final death-grapple of Antæus with Hercules; one of Judith attended by two maids; a mask as of one just awakened after death in hell, fierce with perpetual fear and violent with immortal despair; a young girl gathering up her dress and looking back, her old nurse near at hand,—a Juliet as it were before the advent of passion; a youth raised from the dead, in whom miraculous life leaps back into a face full of dawning wonder and departing heaviness; an old man satyr-headed; a kneeling Virgin, recalling to modern eyes the earliest pictures of Mr. Rossetti,—a type of clear holiness and grave beauty. Of Francia there is one example, pretty enough if also petty: a

Virgin and Child among flowering rose-beds. Of Benozzo Gozzoli there is merely a double group of angels and pilgrims, not of course without interest for those who would follow in any way of work the trace of this Chaucer of painting, but not so full of labor and of life as they might hope, who had seen the cartoon at Pisa for his lost fresco of Solomon and the Queen of Sheba, and felt there as always the fruitful variety and vigor of his sleepless and joyous genius. By Ghirlandajo there is a veiled Virgin of straight and sad profile; by Masolino, a sketch of boys disputing, and a woman with chaplet in hand; by some pseudo-Giotto or Giotto, a Saint Cecilia at a piano-like organ, with a dog roughly sketched,—curious, and worth a look; by Pesello, a Virgin seated between Christ and St. John, an arm passed round either child; their heads are merely sketched; her face under a light veil of loose hair, has a look at once pained and smiling. By Pesellino there are some fine studies of single figures, worth notice, rather than comment. Of Masaccio there is here less than might be hoped; a few single figures, and one sketch of a crowd, strong but slight, and to which only the name appended draws immediate attention. By Lorenzi di Credi there is an elaborate study of a kneeling saint with huge, fan-shaped beard.

In the same room, as elsewhere, are many sketches by hands unknown. Among these are several full of various power and fine invention. A few only can here be noticed at random, as these: a man's head, three quarters seen, with strong brows well apart, lips open and somewhat narrow, firm, flattish nose and short neck; a girl seen from behind, with huddled clothes, and arms violently lifted; studies of boys, by the same hand, some sitting, one kneeling on a stool, one holding his foot; and again, dif-

ferent from this, a naked boy, with foot wounded by a thorn; exquisite, and not copied from the statue, but full of grace and fair life. Elsewhere, also unassigned, is a vigorous drawing of a monk's head, with cowl flung back; a larger design of the Virgin and certain saints adoring the corpse of Christ in a wilderness, where grow the palms of martyrdom; far off by the ready grave an angel watches in wait; on a remote hill three dim crosses rise scarcely into light; and in another line of distance a city is seen, and bays of sea on a varying shore. To this is appended a note, stating that the owner, in 1458,* "had it from a painter in the Borgo San Sepolcro, named Pietro."

By the sculptor Ghiberti there is a study for a statue in the shrine of a virgin saint; she stands glorified in the grace and state of delicate work, with hair drawn upwards round the head.

By Simone Memmi there is a finished drawing in three divisions, as though for a triptych; first the shepherds awakened by a sudden sound of descending angels; then the Nativity, then the Crucifixion, with a guard of armed knights about the cross. There is no other sample of early Sienese work, and but one later drawing of a Sienese artist.

Of the Venetians, early or late, there is ample and splendid witness, even in these slighter things, how supreme was their power upon all forms of beauty. The drawings of Titian and Giorgione are indeed the chief decorations of the place. Among the earlier of their famous men, there is a sketch by Genibile Bellini, of a procession with lighted candles, through a square with a

*I am not certain whether this be not rather the date of the painter's birth; the day of the month is added, I think the 12th or 13th of March, but cannot be sure that my hasty transcript was accurate or complete. Of the words given in the text there is no doubt.

central well. The great painter of sacred feasts and triumphal crowds has left one minor and separate study : a youth reclining, who leans against a tree, his head crowned with rich and rippling hair. Of such studies there are many by his greater brother ; one in red chalk, a lank-haired, aquiline head ; a group of monks, one kneeling as reproved, with a face of stupid shame ; the reprover, an erect, ascetic figure, stands over him with features sharpened for rebuke ; two others look on, sly and frightened. By Giovanni, too, there is a procession ; the crowd swarms deep in street and loggia, under roof and abroad. Near this is a sketch of a poet crowned with broad leaves of laurel, his back turned. In Bellini's chiaroscuro drawing of the "Burial of Christ" (No. 581, in the Uffizj catalogue), there reappears as Nicodemus or Joseph of Arimathea, a head here separately sketched ; a head rather aging than aged, turbaned, with double tuft of mustache, and whiskers meeting under the chin ; with strong mouth and glancing eyes. There is also a drawing by the master of himself, done in red chalk ; the beautiful, grave face, sweet and strong, full of grace and thought, is hard to mistake or to forget.

The designs of Carpaccio recall not less than these the painter's habit of mind and work. By him there is a drawing of two brothers, one with sword by side, and wearing deep boots, one clothed in a full civic gown, with round balls hanging down it by way of fringe, both with spurs on their heels. One design may be a sketch for his Presentation of the Virgin : here in the Piazzetta of Venice a priest receives a kneeling girl. There are sketches besides of hags, of priests and nuns ; a dog-headed chimæra with a fragment of sword stuck in its neck, the knight about to dispatch it with the haft ; a

crowd with horses and trumpets filling the Piazza of St. Mark, here altered in proportions, but not the less, recognizable; studies of full-sleeved arms and hands,—one bearing keys, one a book, one an apple, and so forth,—studiously wrought and varied; a head that might well serve for Shylock's, the typical Jew of Venice, with a face of keen and vigorous cruelty; a reading priest with broad beard shaped like an open fan.

But the designs of Titian and Giorgione are more precious and wonderful than these. From his sketches alone it might be evident that Titian was the chief of all landscape painters. The priceless samples of his work here exhibited demand long and loving study from those who desire to estimate them aright. They are fresher than the merest suggestions, more perfect than the most finished elaborations, of other men. It is not by intellectual weight or imaginative significance that these Venetians are so great. That praise is the proper appanage of the Milanese and the Roman schools,—of Michel Angelo and Leonardo. Those had more of thought and fancy, of meaning and motive. But since the Greek sculptors there was never a race of artists so humbly and so wholly devoted to the worship of beauty. This was enough for them, and for no other workmen.

First among these pen-and-ink landscapes of Titian is one which gives us in full outline the likeness of a high hill rising over a fort; before and beyond it a wild length of broken land expands and undulates, clothed with all manner of trees in full beauty of blossom and leaf, haunted by flying and settling birds. Next to this we find a sudden sunny bank in the dim depth of a wood, with a wolf at watch and a rabbit at wait. Next, a bay deeply wooded to the verge of the soft sea, with low rocks far

off under the wash of the tender water. The fourth design is traversed by a river, which curves rapidly and roughly round the sudden steep of a broken bank, fringed with the herbage and foliage of untrimmed and windy growth; in front, where the wide water elbows its way round a corner of grassy land, a little child is embracing a lamb, with fat, strenuous arms and intent face; hard by is the stump of a felled tree, well-nigh buried in rank overgrowth of deep, wild grass; beyond this the rising towers of a city watered by the further stream, and a remote church seen among tall, slim stems of trees. Next to this we find a city set among the sloping folds of a hill-country; full in front of the design are two firs, rigidly clipped and pared up to the topmost tuft; on a rise of ground beyond these a small, close wood, crowning as with native plumes the head of the slanting land; in the middle valley are sheep at pasture; and the wooded slopes, warm with summer and sweet at once with life and sleep, bend and flow either way in fruitful repose, shaped like waves of the sea after a wind, that seem at once to move and to rest, to change and to remain.

Next, a sudden nook or corner of high-lying land in some wild wood, opening at the skirt upon a fresh waste ground, a place of broken banks fringed and feathered with thick grasses full of the wind and the sun; to the right, a land of higher hills, with a city framed and radiant among them. Then comes another such corner of woodland, rocky, strewn with stones curiously notched and veined; and here, too, infinite summer hills open and recede and melt into farther and nearer forms in solid undulation without change, billows of the inland crowned not with foam but with grass, and clothed with trees. not moulded out of mutable water.



NEW MASONIC TEMPLE.

Other work of Titian is here besides these seven finished sketches; slighter work, and not in the line of landscape. There is a vision of Virgin and Child appearing in a Thebaid desert to some saint,—Anthony, apparently, as the typical swine's snout obtrudes itself with a quaint, innocent, bestial expression. Note also a lovely and vigorous group of Cupids grappling in play with a great hound, which all they can hardly overset; the eager laughing labor of the bare-limbed boys and the gravely gamesome resistance of the beast are things to see and remember, as given by the great master. There are studies, too, for the famous picture of St. Peter Martyr; there is a head like Michel Angelo's Brutus, with large, broad nose.

In samples of Giorgione's work the collection is not less rich. Sixteen sketches and studies, variously finished, bear witness for him. First, a most noble male profile, with blunt nose, mouth fretted, and hard cheek; a strong man weary, with tough spirit growing tired too. Unlike this, a large priestly head, loose about the jaw, firm in the upper part; with a long mouth like a slit; by no means unlike the recognizable head of Alexander VI.; on the medals of the great Borgia you see just such a strong brow of state-craft, such a resolute eye, such a heavy, lax, lustful under-face. Next, three heads together; the first may be boy's or girl's, having in it the delicious doubt of ungrown beauty, pausing at the point where the ways of loveliness divide; we may give it the typical strawberry flower (*Fragoletta*), and leave it to the Loves; the second is a priest's, wearing a skull-cap, and very like the middle musician of the three in Giorgione's divine picture in the Pitti; the third an old man's head, cowled and bearded. Next, a girl with a book of music; many bend

over her; two faces to the right are specially worth notice,—a youth of that exquisite Venetian beauty which in all these painters lifts male and female together on an equal level of loveliness; and an older head near him, stamped with scorn as with a brand. Next, and slightly wrought, on a raised couch or step of a palace, a group of revellers embracing and gazing outward; one leans round a girl to read with her from some joyous book. Next, a full face, wasted by time or thought or pleasure, with a clear sardonic look left in it; next, a close-curved imperial head; next, a gathering of counsellors, a smile on their chief man's face. Then a very noble naked study from behind; a figure planted with knees apart as if bestriding, with strained back and muscles leaping, with curly, Herculean hair; naked down to the thighs, then draped, but finished only to one knee. Next, one of the most perfect of these studies, a superb head of one in pain, the face drawn, and not disfigured by suffering. Next, an infant covering its mouth with its hand, in a life-like and gracious gesture. Next, in a Thebaid, a skin-clad saint sinking as in swoon, all but sunken already through fasting or trance; on the same paper are studies of hands and feet. Then a Virgin and Child, with an old man kneeling; then the figure of a youth seemingly made ready for torture,—a fair and brave martyr's face; this and the next are figures about two-thirds or three-fourths of the length of the whole. The next I take to be a design for Lucretia; a naked woman, loose-haired, with the left arm raised, and with the right hand setting, as it seems, a dagger under the right breast; on the wall by her is an escutcheon, which may indicate, if it be a serious part of the design, some later suicide than the Roman matron's; it matters little to the interest of the study.

Apart from these is a sketch of some pagan feast, with torchlight and blast of trumpets ; several figures and faces are noticeable here ; a youth fallen on his knees ; a boyish torch-bearer, with blown cheeks and subtle, sharp-edged eyes ; the head of a boy who rests his hand on the shoulder of another ; a face seen behind, with rounded mouth and blowing hair ; the whole design profuse of interest and invention. In these light sketches, or even in these rough notes, the vivacity and warm strength as of sunlight which distinguish the painter's imagination, are traceable. With all the deep, sweet tragic color, the divine oppression of a delight whose eyes grow sorrowful with past thought and future dream,—“large discourse, looking before and after ;” with all the pathos of pleasure never translated as in his pictures but once, in Keats' Ode to Melancholy ; the adorable genius of Giorgione, like the beautiful mouth of Chaucer's mistress, is always “most glad and sad.”

By Paolo Veronese there is one design of a feast disturbed and breaking up ; in one corner the figure of an old man ; a girl sinking at his feet clasps him by the ankle. In front, of course, is a dog, and sidelong from under the table-cloth a dog's head peers with the bright-eyed caution of its kind ; the whole design has interest and character. Unluckily for the affectionate students of Bonifazio, there is but one slight sketch by that master of all gracious and pleasant beauty ; as the subject is music-making, it might have been finished into a nobly delightful piece of work, and significant of his love of sweet sound and fair form met together and made one in the sight of art. Of Tintoretto there is not much arranged and framed above stairs : a Doge in his quaint buttoned robe ; a study of a knight's lance and helmet held by his

page,—Gattamelata's, as I thought at first, a design for the great portrait, but it seems doubtful. A more important design is one, very noble and impressive in sentiment, of the Deposition of Christ; the body is carried off through a steep and strait gorge between rocky hills below Calvary; the Virgin has fallen in utter swoon. There is also a small, oval-faced figure of a girl at prayer; and a noble design of four angels rushing down to judgment, with violent wings and blowing trumpets that betray the artist; their fierce flight and thunder of summoning sound have roused the dead already; some are precipitated hellward, some aspire as on sudden wings; three, newly roused, sit still and gaze upward. Again, a naked woman startled in bed by the advent of a witch with cap and broom. In the lower rooms, among the unregistered masses of designs, I saw a huge portfolio crammed with rough figure-sketches by Tintoretto, in his broad gigantic manner, but too slight to be of any descriptive interest; though to him they doubtless had their use, and might have the like to an artist who should now care to study them.

Assigned to Raffaello is a sketch in pen-and-ink of a cavalcade passing a seaport town, recognizable as the first design for one of the great series at Siena representing the life of Æneas Sylvius, in which Raffaello is supposed to have assisted Pinturicchio. The name of "Messer Domenicho da Capranicha" (the Cardinal) is scribbled on the drawing itself; and the composition is pretty much that of the fresco; the horses turn at the same point, the groups are massed and the line of harbor shown in the same manner. By Giulio Romano there are two designs for Circe; in one the sorceress lets down an urn among her transformed beasts, holding, it may be, some strange

food or fume of magic drugs ; among them are two griffins and an eagle. In the other design she is in the act of transformation, an incarnate sorcery ; two men yet undegraded are already confounded and lost with their fallen fellows. Another careful sketch is that of Dædalus building up the hollow wooden cow for Pasiphae ; the strange machine is well-nigh perfect ; a whole troop of Loves lend helping hands to the work—sawing, whetting steel, doing all manner of carpentry, with light feet and laughing faces full of their mother's mirth.

Of Sodoma, again, there is but one example ; it may be that Vasari's well-known and memorable ill-will toward the great Sieneſe excluded others from his collection, if indeed this one came from thence. It is a beautiful and elaborate drawing, partly colored ; a boy with full wavy curls, crowned with leaves, wearing a red dress banded with gold and black, and fringed with speckled fur ; the large, bright eyes and glad, fresh lips animate the beauty of the face ; Razzi* never painted a fairer, full as his works are of fair forms and faces.

I may here, as well as anywhere else among these disconnected notes, turn to the samples of German work in this collection ; to the sketches of Durer, Holbein, and Mabuse, which have found favor in Italian eyes.

Two studies of the Passion by Durer are noticeable ; in this Christ is bearing the cross, in that sinking under it ; the press of the crowd, the fashion of the portcullis, recall the birthplace and the habit of the master. From his hand we have also secular and allegoric sketches ; one a design for the famous figure of Fortune,—an old man's head with

*Razzi, as the last Sieneſe guide-book will needs have him called ; Razzi or Razzi, Sodoma or Sodona, the name of St. Catherine's great painter, seems doomed to remain a riddle. Happily the beauty of his work is no such open question, so that the name matters little enough.

heavy lips and nose, a collar tied loose round the large throat; another head, bearded and supine; slight studies of man and horse and child; a Deposition of Christ, and a Burial, with fine realastic landscape hard by the city walls; a man beheading a woman, who in the act grasps hard the doomed head with his unarmed left hand. By Mabuse there is a quaint horror in the way of martyrology; the boiling of some saint in a vessel like a kitchen-pot, while one tormentor scalds his head with water or oil or molten metal out of a little bucket at the end of a pole. Mabuse in his sketches has revelled in the ways and works of hangmen, seen in a grim, broad light of German laughter; their quaint gestures and quaint implements have a ludicrous and bloody look; observe another pot with rings round it, ominous and simple in make, and the boy staring with strained eyes. These fine, sharp caricatures of tortures might serve a modern eye as studies for Henriet Cousin of *Notre Dame de Paris* or Master Hansen of *Sidonía*; there is a stupid funereal fun in the brute mechanism of their aspect. He has also a really fine drawing of a saint stepping into his own grave, made ready in a chapel before the altar. Martin Schongauer, too, has left a good female head with ample hair, and a strong, hard design of a knight and devil in deadly grapple. A head after Holbein is unmistakable; the hair is thick, the chin long, the fine lips fretted and keen. Not far off is the only waif of Spanish art I find here; a head sketched in chalk by Velasquez, with large eyes and red lips, the upper lip thin.

I turn back to Florence for my last note; to one of her dearest and noblest names, reserved with love for this last place. With the majestic and the tragic things of art we began, at the landmarks set by Leonardo and Michel

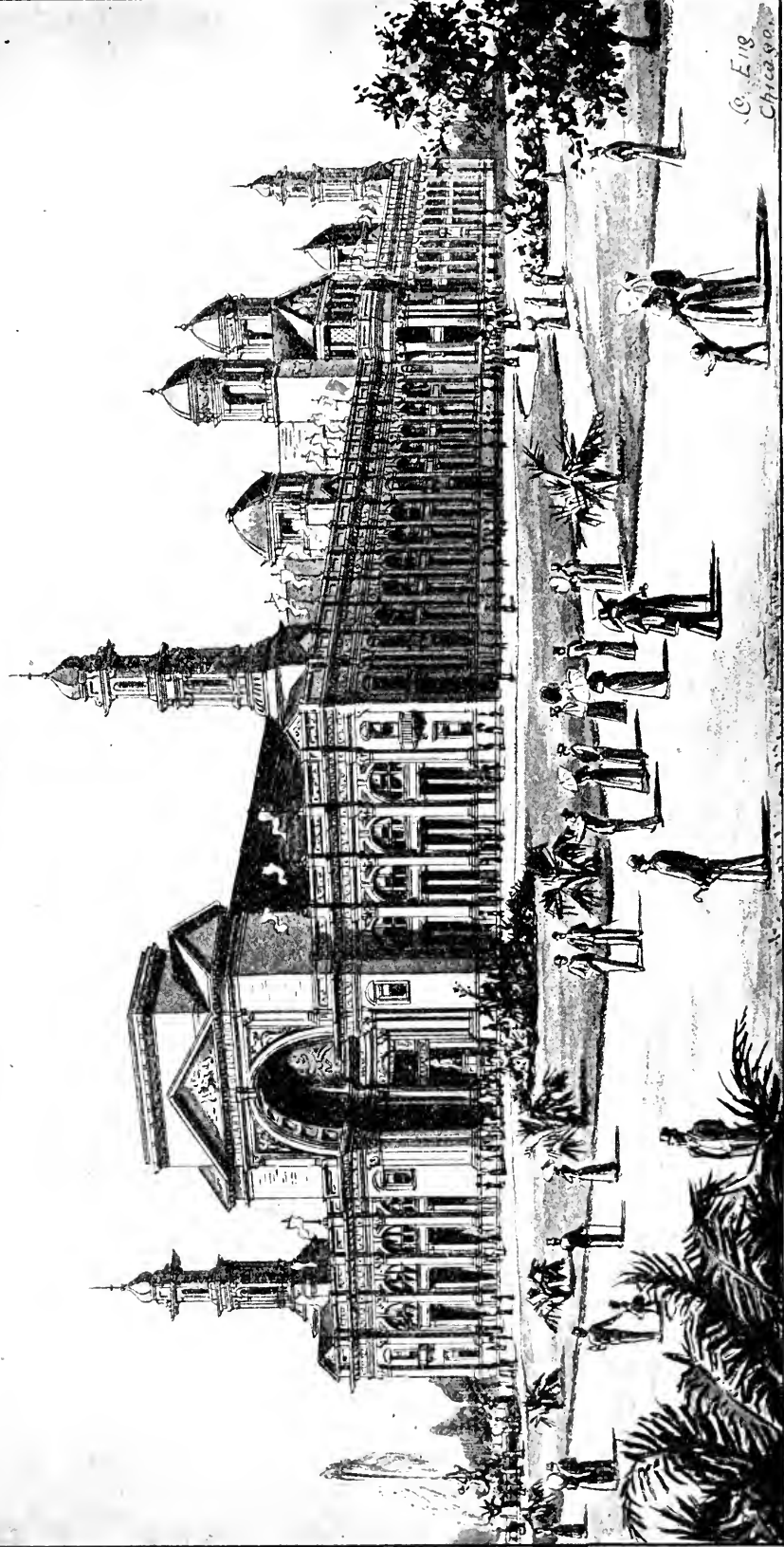
Angelo ; and are come now, not quite at random, to the lyric and elegiac loveliness of Andrea del Sarto. To praise him would need sweeter and purer speech than this of ours. His art is to me as the Tuscan April in its temperate days, fresh and tender and clear, but lulled and kindled by such air and light as fills the life of the growing year with fire. At Florence only can one trace and tell how great a painter and how various he was. There only, but surely there, can the influence and pressure of the things of time on his immortal spirit be understood ; how much of him was killed or changed, how much of him could not be. They are the first-fruits of his flowering manhood, when the bright and buoyant genius in him had free play and large delight in its handiwork ; when the fresh interest of invention was still his, and the dramatic sense, the pleasure in the play of life, the power of motion and variety ; before the old strength of sight and of flight had passed from weary wing and clouding eye, the old pride and energy of enjoyment had gone out of hand and heart. How the change fell upon him, and how it wrought, any one may see who compares his later with his earlier work ; with the series, for instance, of outlines representing the story of St. John Baptist in the desolate little cloister of Lo Scalzo. In these mural designs there is such exultation and exuberance of young power, of fresh passion and imagination, that only by the innate grace can one recognize the hand of the master whom hitherto we knew by the works of his after life, when the gift of grace had survived the gift of invention. This and all other gifts it did survive, all pleasure of life and power of mind, all the conscience of the man, his will, his character, his troubles, his triumphs, his sin and honor, heart-break and shame. All these his charm of

touch, his sweetness of execution, his "Elysian beauty, melancholy grace," outlived, and blossomed in their dust. Turn from that cloistral series to those later pictures painted when he was "faultless," and nothing more; and seeing all the growth and all the gain, all the change and all the loss, one to whom the record was unknown would feel and foreknow his story and his sorrow. In the cloister, what life and fulness of growing and strengthening genius, what joyous sense of its growth and the fair field before it, what dramatic delight in character and action! where St. John preaches in the wilderness and the few first listeners are gathered together at his feet, old people and poor, soul-stricken, silent,—women with worn, still faces, and a spirit in their tired, aged eyes that feeds heartily and hungrily on his words,—all the haggard funereal group filled from the fountain of his faith with gradual fire and white-heat of soul; or where Salome dances before Herod, an incarnate figure of music, grave and graceful, light and glad, the song of a bird made flesh, with perfect poise of her sweet slight body from the maiden face to the melodious feet; no tyrannous or treacherous goddess of deadly beauty, but a simple virgin, with the cold charm of girlhood and the mobile charm of childhood; as indifferent and innocent when she stands before Herodias, and when she receives the severed head of John with her slender and steady hand: a pure, bright animal, knowing nothing of man, and of life nothing but instinct and motion. In her mother's mature and conscious beauty there is visible the voluptuous will of a harlot and a queen; but, for herself, she has neither malice nor pity; her beauty is a maiden force of nature, capable of bloodshed without bloodguiltiness; the king hangs upon the music of her movement, the rhythm of

leaping life in her fair, fleet limbs, as one who listens to a tune, subdued by the rapture of sound, absorbed in purity of fashion.

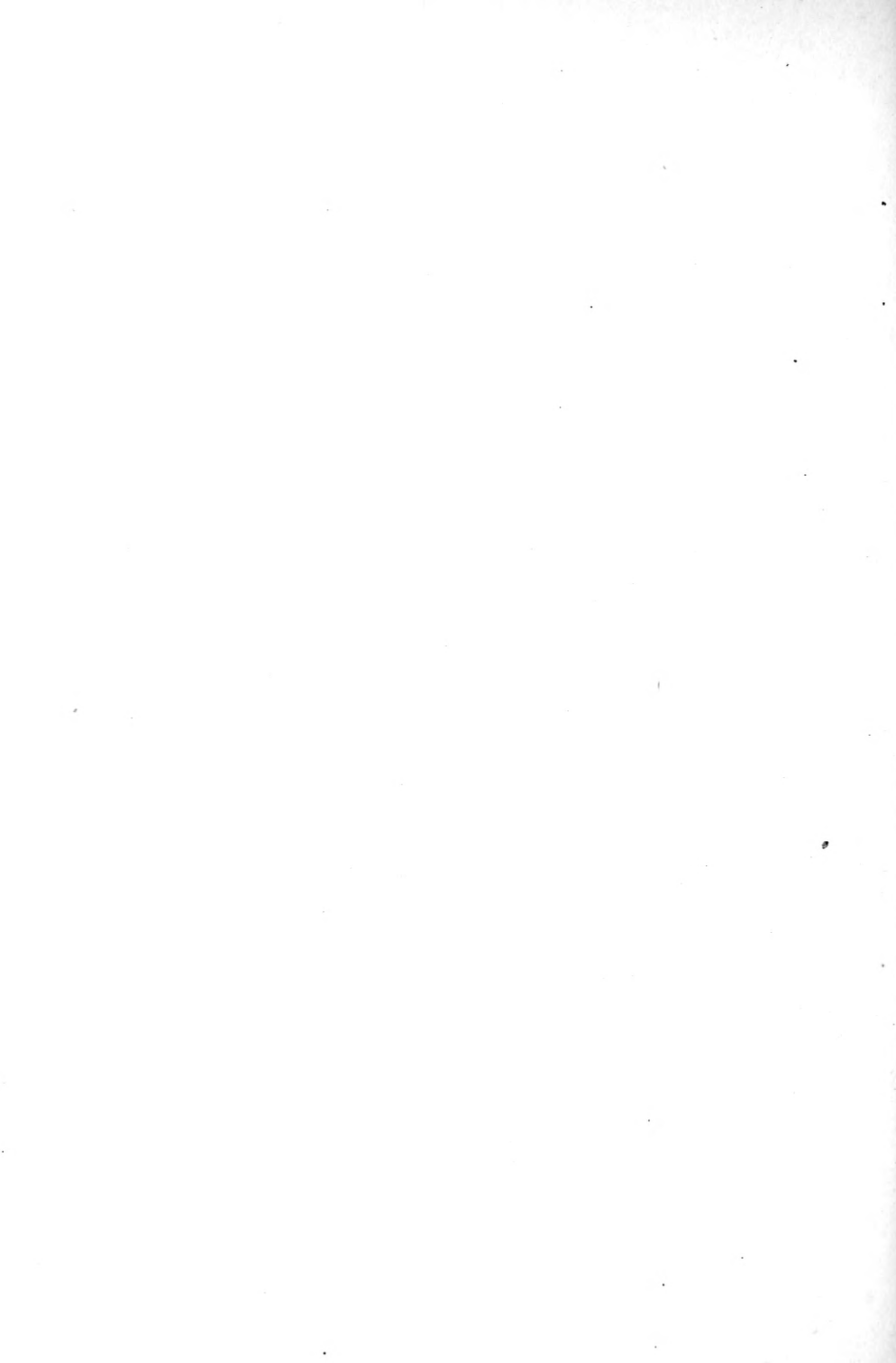
I know not where the subject has been touched with such fine and keen imagination as here. The time came when another than Salome was to dance before the eyes of the painter; and she required of him the head of no man, but his own soul; and he paid the forfeit into her hands. With the coming of that time upon him came the change upon his heart and hand, "the work of an imperious, whorish woman." Those words, set by the prophet as a brand upon the fallen forehead of the chosen bride, come back to mind as one studies in her husband's pictures the full, calm lineaments, the large and serene beauty of Lucrezia del Fede; a predominant and placid beauty, placid and implacable, not to be pleaded with or fought against. Voluptuous always and slothful, subtle at times, no doubt, and sweet beyond measure, full of heavy beauty and warm, slow grace, her features bear no sign of possible love or conscience. Seen side by side with his clear, sad face, hers tells more of the story than any written record, even though two poets of our age have taken it up. In the feverish and feeble melodrama of Alfred de Musset there is no touch of tragedy, hardly a shadow of passionate and piteous truth; in Mr. Browning's noblest poem,—his noblest it seems to me,—the whole tragedy is distilled into right words, the whole man raised up and re-clothed with flesh. One point only is but lightly touched upon,—missed it could not be by an eye so sharp and skillful,—the effect upon his art of the poisonous solvent of love. How his life was corroded by it and his soul burnt into dead ashes, we are shown in full; but we are not shown in full what as a

painter he was before, what as a painter he might have been without it. This is what I think the works of his youth and age, seen near together, as at Florence, make manifest to any loving and studious eye. In those latter works, the inevitable and fatal figure of the woman recurs with little diversity or change. She has grown into his art, and made it even as herself; rich, monotonous in beauty, calm, complete, without heart or spirit. But his has not been always the "low-pulsed forthright craftsman's hand" it was then. He had started on his way towards another goal than that. Nothing now is left for him to live for but his faultless hand and her faultless face,—still and full, suggestive of no change in the steady, deep-lidded eyes and heavy lovely lips without love or pudency or pity. Here among his sketches we find it again and ever again the same, crowned and clothed only with the glory and the joy and the majesty of the flesh. When the luxurious and subtle sense which serves the woman for a soul looks forth and speaks plainest from those eyes and lips, she is sovereign and stately still; there is in her beauty nothing common or unclean. We cannot but see her for what she is; but her majestic face makes no appeal for homage or forgiveness. Above stairs and below I saw many of Andrea's studies of figure; first, a sketch of Lucrezia seated with legs bare, perfect in shapeliness and state; in a larger drawing she is naked, and holds a child; sitting, as I presume, for the appropriate part of the Virgin. There is another and most beautiful drawing on yellow paper, which gives her full face in all its glory of form without a fault,—not heavenly, but adorable as heaven. His sketches of landscape and studies of children are lovely and many; round-limbed babies in red chalk out-line, with full-blown laughter in their



C. E. 118
Chicago, Ill.

ELECTRICAL BUILDING.



mouths and eyes ; such flowers of flesh and live fruits of man as only a great love and liking for new-born children could have helped him to render. The wonderful and beautiful make of limb and feature, the lovely lines and warm curves of the little form, are so tenderly and fully made most of and caressed as with mother's hands. that here as in his portrait, you can tell at once his fondness for them. His sad and sensitive, smiling face has the look of a lover of children ; the quiet and queenly beauty of his wife has not, One superb boy-baby, in Sidney's phrase, a "heavenly fool with most kiss-worthy face," attempting to embrace his round, fat knees with his fat round arms, and laughing with delight in the difficulty, is a more triumphant child than ever painter drew before or since. A sketch of a castle with outlying lodge is marked as "begun on the twentieth of August, 1527." Among other studies is one of a cavalry skirmish among the rounded and rising downs of a high hill-country, with a church and castle at hand. Among the figure drawings I took note of these : a portrait in profile of a man still young, ill-favored and sullen, with sinewy neck and cruel eye, with snub nose and thick, thrust-out lips,—a portrait it clearly is, and whose it would be worth while to know, so careful has the artist been to reproduce the native stamp of aspect ; a naked youth, with arms doubled up around the neck, leaning aslant on a staff, with ruffled hair and a set face ; a noble head like Nero's, in red chalk, with hair blown loose and rough by the wind ; a boy's figure on a step of some entrance, drawing the curtain of a tent, with loose ribbons at the shoulder, and with a curling plume of hair ; a slender figure, fair and graceful, the face smiling, but drawn and fixed ; the fierce aquiline head of a prophet or apostle, with upper lip thinner than the under. These

complete my roll, and conclude these notes. They might have been fuller and more orderly, but could never have had any value other than that of a clear and genuine impression. Transcribed at stray times from the roughest memorial jottings, they may claim to give this at least. I close as I began them with a hope that they may perhaps, in default of a better handbook, afford some chance help to a casual student of such unclassed relics of the old, great schools, and with a glad affectionate memory of these and of all things in Florence.

THE ELECTRICAL DEPARTMENT.

It is but a few years since a step was taken such as rendered "the sightless couriers of the air" obedient to man's will. Chief in genius and useful inventiveness is our own Edison, and as has been mentioned, he has resolved to outdo himself, rightly regarding The World's Columbian Exposition as the opportunity of a life-time. With Edison and the German Siemens as competitors, what gladiatorial contests may we not expect?

There has been incorporated in Illinois, the Chicago and St. Louis Electric Railway Company, of which the *St. Louis Chronicle* speaks as follows:

The engineering corps of the Chicago and St. Louis Electric Railway Company, consisting of Tyre C. Hughes, Chief Engineer, and Messrs. E. A. Guill, W. K. Grady, E. T. Lurton and C. Elliott Carper, leave St. Louis to-day to make the survey of three proposed routes of the above road between this city and Chicago.

This will be the first air-line railroad ever built in the

world, and the work of running the line presents some new problems of unknown experiences to practical field engineers. The basis for the work has long been known, and much speculation has been indulged in, but never before in the history of civil engineering has such a line been run.

It will be 250 miles long; 33 miles shorter than any route existing between the two cities. The line will be connected with the United States Government surveys at this point and will connect therewith on the top of the old water-tower in this city, and hence will be connected with all of the United States Mississippi river triangulation stations. It will end on the Shot-tower in Chicago, and will therefore be connected with the Coast and United States Geodetic Lake Surveys. Chief Engineer Hughes estimates that will it require 50 days to run the line.

Chief Engineer Hughes began the work of locating the starting point this morning. He began from the top of the Water-tower, sending the balance of his force across the river. The Washington University instruments will be used and Prof. Nipher will assist in taking the observations. It will probably require five days to locate the starting point. The calculations must be absolutely accurate. If there is an error of 1-64 of one inch in the measurements at the starting point, the line would be five miles out of the way at Chicago.

This is the road which is to make the run between this city and Chicago in two hours and a half. Dr. Wellington Adams, General Manager of the road, will appear before the Executive Committee of the Fall Festivities Association this evening and lay before them his plans for building the road and connect this city with Chicago in time for the World's Fair.

Edison has among his latest inventions a Kinetograph, or combination of phonograph and photograph. The phonographs now in use, it will be remembered, give an enjoyable reproduction of music and elocutionary efforts, so that with the addition of life-like photographs the entertainment bids fair to realize the Utopian ideas of Belamy's "Looking Backwards."

The electrical display will not simply delight the eye by its creation of an artificial moonlight, but it will enable the intelligently curious to educate themselves sufficiently in the development from Franklin's kite to Edison's latest device, to more than stupidly wonder at succeeding wonders which are produced by no supernatural means, but by intelligent mastery of this power of nature. Edison, himself, will be at the World's Columbian Exposition, and appreciating the rare opportunity, has resolved, as is reported, to use to advantage 30,000 feet of space and to introduce to the scientific world various great and new inventions. A revolution in telegraphy is promised by a Philadelphia inventor who dispenses with the need for any receiving operator; who extends the field of the type-writer by enabling each type-writer to become, without further instruction, an intelligent telegrapher, and who insures the secrecy of all telegrams.

The Proctor Electrical Fleet is elsewhere described, but justifies mention while speaking of the various applications of electricity. The fleet is to consist of boats fifty feet in length and nearly nine feet beam, but which draw less than four feet of water. Every luxury of travel will be lavished upon them, and they will, with their incandescent lights, furnish a real midsummer-night's dream from which, though Titania be wanting, Bottom will surely be there.

The assurance that the American Edison and the German Siemens will both be present in full force at The World's Columbian Exposition, renders it certain that every possible application of electricity will be exhibited to the visitor. Edison announces that he already has various wonderful inventions, far surpassing in interest and importance the results already achieved by his magical skill; and Dr. Siemens is to expend \$200,000 in contesting America's claim to the world's championship. The illustrated phonograph, push-buttons, lamp-lighters, burglar alarms, radiators, ventilators, cook-stoves, elevator-motors, dish-washers, refuse-consumers, are some of the many objects which will claim attention.

Surveys are now being made for the air-line electric railway from St. Louis to Chicago, so that those who visit the former city, as well as they whose route lies by its doors, will be able to rival Shakespeare's Ariel and "put a girdle round the world in twenty seconds."

THE GOVERNMENT BUILDING.

The United States Government has provided royally for its proper representation at The World's Columbian Exposition, and will place this in charge of the War Department.

The War Department requires \$235,000 for its exhibit, and will display in their entirety the Quartermaster's Department, the Engineer Corps, the Ordnance Department, the Signal Service, and the Medical Department. In a country so recently escaped from the throes of a civil war there will be millions of persons who find their interest in

the paraphernalia of military life. A novel feature, adopted in accordance of the evolutionary idea which will dominate the World's Columbian Exposition, will be the presentation of the various uniforms used from the time of the American Revolution to the present day.

THE NAVAL EXHIBIT.

Unique among the exhibits is that made by the United States Navy Department. It is a structure which, to all outward appearance, is a faithful, full-sized model of one of the new coast-line battle-ships designed by the Bureau of Construction and Repairs of the Navy Department, and now being built at a cost of about \$3,000,000 each by Cramp & Son, Philadelphia, and the Union Iron Works, San Francisco. This imitation battleship of 1893 is erected on piling on the lake front in the northeast portion of Jackson Park. It is surrounded by water, and has the appearance of being moored to a wharf. The structure has all the fittings that belong to the actual ship, such as guns, turrets, torpedo-tubes, torpedo-nets and booms, with boats, anchors, chain-cables, davits, awnings, deck-fittings, etc., etc., together with all appliances for working the same. Officers, seamen, mechanics and marines are detailed by the Navy Department during the Exposition, and the discipline and mode of life on our naval vessels are completely shown. The detail of men is not, however, as great as the complement of the actual ship. The crew give certain drills, especially boat, torpedo and gun drills, as in a vessel of war.

The dimensions of the structure are those of the actual

battleship, to-wit: length, 348 feet, and width amidships 69 feet 3 inches; from the water line to the top of the main deck, 12 feet. Centrally placed on this deck is a superstructure 8 feet high, with a hammock berthing on the same 7 feet high, and above these are the bridge, chart-house and the boats.

At the forward end of the superstructure there is a coned-shaped tower, called the "military-mast," near the top of which are placed two circular "tops" as receptacles for sharpshooters. Rapid-firing guns are mounted in each of these tops. The height from the water line to the summit of this military mast is 75 feet, and above is placed a flagstaff for signaling.

The battery mounted comprises four 13-inch breech-loading rifle cannon; eight 8-inch breech-loading rifle cannon; four 6-inch breech-loading rifle cannon; twenty 6-pound rapid-firing guns; six 1-pound rapid-firing guns; two Gatling-guns, and six torpedo tubes or torpedo-guns. All of these are placed and mounted respectively as in the genuine battleship.

The superstructure shows the cabins, staterooms, lavatories, latrines, mess-rooms, galley and fittings, mess-table for crew, lockers, berthings, etc., also the manner in which officers and enlisted men live, according to the rules of the Navy. On the superstructure deck and bridge is shown the manner in which the rapid-firing guns, search-lights, boats, etc., are handled. The entrance to the conning-tower is from the deck, in which are all appurtenances that the captain has at his disposal when taking the ship into battle and during the progress of a fight at sea.

An electric light plant is installed and provision made for heating with steam. On the berth-deck are shown

the various fittings pertaining to the hull, machinery and ordnance; ordnance implements, including electrical devices, gun-carriage motors and range finders; models showing typical ships of the past and present; samples of the provisions, clothing, stores and supplies, bunting, flags, etc.; in short the thousand and one things that go to make up the outfit of a man-of-war.

The traditional costumes of the sailors of the Navy from 1775 to 1848 are shown by janitors dressed in those costumes.

On the starboard side of the ship is shown the torpedo protection-net, stretching the entire length of the vessel. Steam launches and cutters ride at the booms, and all the outward appearance of a real ship of war is imitated.

The design for the Naval Exhibit was conceived by Captain R. W. Meade, U. S. N., the Naval Director and member of the Board of Control and Management of the United States Government exhibit, but the details of his plan were worked out by one of the leading draughtsmen of the Bureau of Construction, Mr. F. W. Crogan, assisted by Mr. Middleton, draughtsman from the office of the Supervising Architect of the Treasury Department, and Lieutenant E. D. Taussig, U. S. N., who were detailed by the Navy Department to assist Captain Meade.

Nothing of the kind has ever before been attempted at a World's Fair. The cost of the curious and original building is about \$100,000.

MACHINERY HALL.

The visitor to The World's Columbian Exposition must ever bear in mind that he can feel interest only when he knows how to look at the various exhibits. Everyone boasts of America's mechanical triumphs, as if the boaster had had the chief part in the production of these. But on the other hand, the popular intelligence is so very general that most persons walk through the machinery displays with as little interest and appreciation as a cow might go through an art gallery. It is one aim of The World's Columbian Exposition and Chicago Guide to at least suggest such means of preparation as shall reveal to each the wonders of these unknown worlds, and cause him to gain the strength which comes from understanding-forms of expression not his own.

What shall I look at in the machinery hall, and what shall I look for when I give the different objects my attention? There are several ways of giving a popular answer to this question.

I. Look at the kind of objects with which you have some acquaintance, and look for the special improvements which these exhibit, and ask how these advantages are gained.

II. Read primers of machinery, etc., so that through the provision of the Chatauqua or some similar example of the university extension idea, you gain such information in outline as will provide you with lenses through which to look.

III. Read the following exhibit of the most notable examples of mechanism at preceding expositions, and

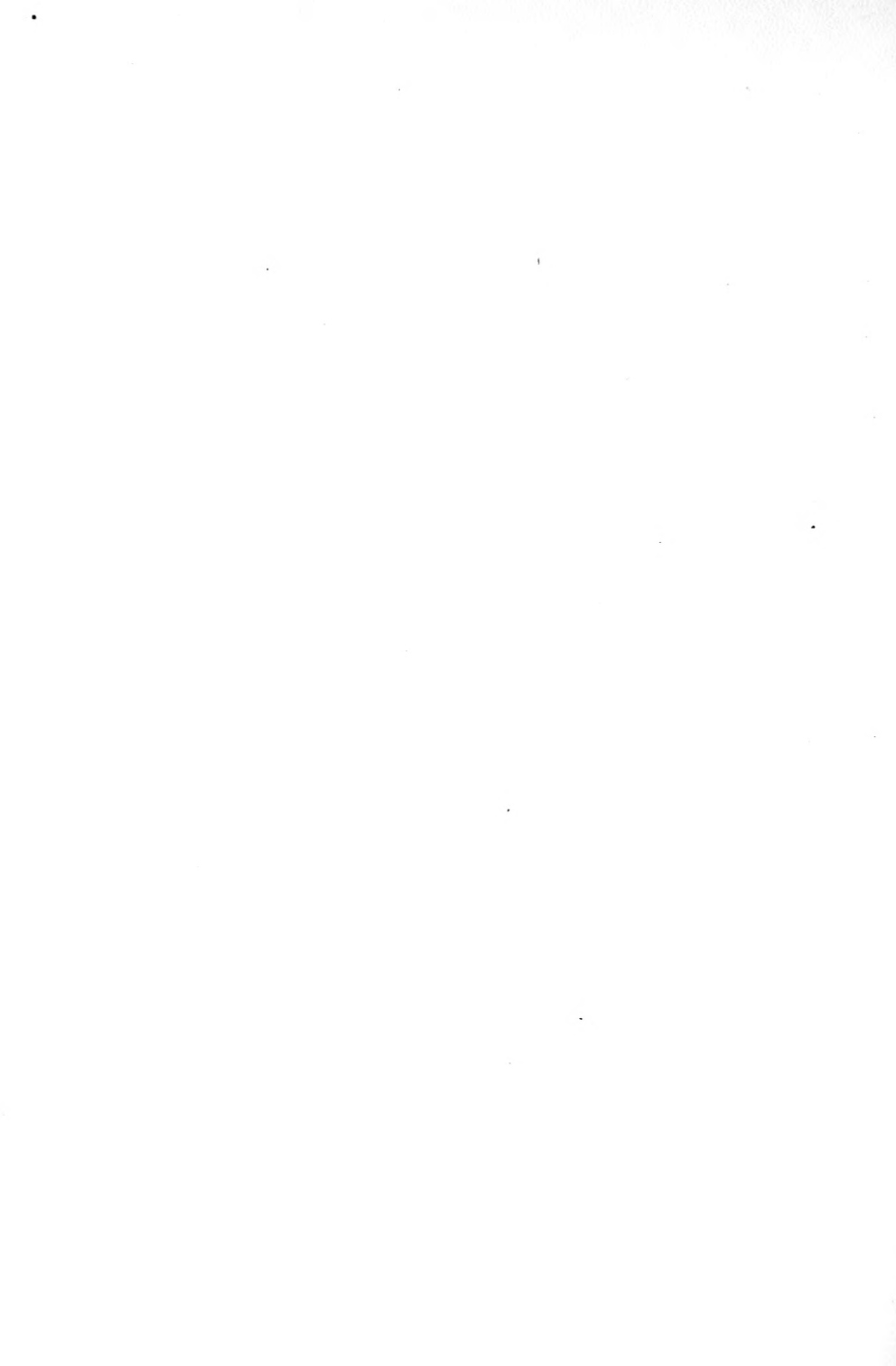
through some such work as Ure's Dictionary of the Useful Arts acquaint yourself with their general character, appealing when in distress to some local mechanic:

GREAT BRITAIN.

Hydraulic Riveting Machines.
Band-sawing Machines.
Reciprocating Mortising Machines.
Steam Hammers.
Grid-iron Stage-depositing Dock.
Portable Engines.
Tying-in Machines.
The Iron Shoemaker.
Sun Printing Machines.
Carriages.
Porcelain.
Architectural Stoneware.
Textile Machinery.
Sewer Pipe.
Terra Cotta.
Cutlery.
Chemicals.
Carpets.
Printing Presses.
Radiometer.
Road Rollers.
Road Locomotive Engines.
Agricultural Locomotives.
Atmospheric Gas Engines.
Turbine Water-wheels.
Feed-water Heater and Double-acting Force Pump.
Locomotive and Railway Appliances.



30



UNITED STATES.

Gatling Guns.
Compound Car Axle.
Band-saw Setting Machines.
Universal Milling Machines.
Astronomical Apparatus.
Automatic Governor Cut-off Engines.
Geodetic Apparatus.
Shingle and Heading Machines.
Hydro-carbon Engines.
Gaining Machines.
Altitude and Azimuth Instruments.
Processes for Treating Copper.
Gunpowder Pile-drivers.
Sewing Machines.
Patent Milling Cutters.
Improved Pony Planer.
Endless-bed Double-surfacing Machines.
Double-surfacer and Matcher.
Drying Machines.
Time Globes.
College Lanterns.
Sectional Safety Boilers.
Burleigh Drills.
Yale Locks.
The Lyall Loom.
Newspaper Folding Machines.
Watch-making.
Patent Piston Packing.
Barrel-making Machinery.
Fan and Heading-jointer and Dowel-borer.
Machine for Dressing and Leveling.

Stow Flexible Shaft.
Power Treadle Machine.
Portable Steam Engines.
Vertical Engines.
Dovey-Paxman Boilers.
The Corliss Engine
Baldwin Locomotives.
Patent Oil Cups and Automatic Lubricators.
Tool Planing Machines.
Brick Machines.
Clocks.
Difference Engines.
Flexible Mandrels.
Processes for Treating Copper.
Swing Bridges.
Spool-winding Machines.
Blast Engines.
Type-casting Machines.
Apparatus and Instruments for Dental Surgery.
Bolt and Nut-screwing Machines.
Drill Presses.
Boring Machines.
Plate-shearing Machines.
Patent Bolt-cutting and Nut-tapping Machines.
Patent Goose-neck Drill.
Slotting and Paving Machines.
Vertical Car-wheel Borers.
Car-axle Lathes.
Cut-off Engines.
Iron and Steel Processes.
Pillar Shapers.
Boring and Drilling Machines.
Hand Milling Machines.

Revolving Head Screw Machines.
Two-spindle Profiling Machines.
Die-sinking Machines.
The King-Chandron Processes for Boring Artesian Wells.
Drop Presses.
Pinching Presses.
Trimming Presses.
Adjustable Bed Press.

CANADA.

Bevel-edge Boiler and Ship-plate Clipper.
Autographic Testing Machines.

Railway Supplies.

Bolts.
Rivets.
Nuts.
Car Forgings.
Truck Irons.
Train Locks.
Washers.
Steam Riveting Machines.
Instruments for the Civil Engineer.
Engineer's Transit.
Power Looms.
Reeling Machines.
Winding Machines.
Spooling Machines.

Textile Machinery.

Turids.
Cassimeres.

Cheviots.
Flannels.
Blankets.
Sheetings.
Agricultural Machinery.

SWITZERLAND.

Watches.

RUSSIA.

Cutlery.

HOLLAND.

Illustrations of Civil Engineering.

THE NETHERLANDS.

Illustrations of the Jetty System.

BELGIUM.

Semaphore Signals.
Patent Facing Point Locks.
Electric Slot Apparatus.
Carpets.

FRANCE.

Wood and Working Machinery.
Fixed and Portable Log-sawing Machines.
Circular Saws.
Endless Band-Saws.
Planing Machines.
Turning Lathes.
Mortising Machines.
Tenoning Machines.

Boring Machines.
Illustration of Civil Engineering.
Porcelain.
Ceramics.
Carpets.

JAPAN.

Ceramics.
Porcelain.
Pottery.
Decorative Faience.

GERMANY.

Chemicals.
Cotton Goods,
Linens.
Cutlery.
Velvets.
Velveteens.

ICELAND.

Linen Goods.

SWEDEN.

Iron.

PRUSSIA.

Spiegel-Eisen.

The new industries developed in 1876 were in the direction of glassware, earthenware, porcelain, Terra Cotta and ceramics, safes, locks, table cutlery, and edge tools, showed the end of Sheffield's supremacy.

Palace cars, the Miller platform and coupling, and the Westinghouse air-brake marked a new departure in transportation.

Watches, silverware, jewelry, and precious stones,

demonstrated that America was no longer content to import these goods and that her own children were able to compete successfully with the long-established industries of the Old World.

Carpets and oil-cloths announced that America had entered into the race and that it had assurance of supremacy.

Machinery, like cooking, is essential to the comfort and prosperity of our lives, fails to address many because they have no intelligent guide. It is not the gigantic size but the economic power of the Corliss engine that rendered its exhibition a matter of moment, and yet, for lack of proper explanation, most of the visitors at the Centennial saw nothing in it but magnitude. Some idea of the variety of forms in which the ingenuity of the mechanic is expressing itself, may be gained from a simple enumeration of the leading features of the Centennial mechanical display:

Hydraulic Motors and Transmitters.

Pneumatic Apparatus.

Pumps.

Power Engines.

Locomotives.

Railway Supplies.

Brick Machines.

Flexible Mandrels.

Atmospheric Gas Engines.

Water-Wheels.

Steam Hammers.

Textile Fabric Machinery.

Printing Machinery.

Coopers' Machinery.

Tool-making Machinery.

Then there were the various devices which have grown out of Morse's invention of the electric telegraph, such as Telephones, Phonographs, and a seemingly infinite electrical display.

The American believes in making his head assist, not replace, his hands, and he has done more to solve the "Labor Question" than centuries of misgovernment and poor laws as emphasized in the present condition of unhappy Ireland.

In the direction of the applied arts, the United States carried off premiums for jeweler's work as represented by Prize Cups and Trophies; Illuminated Windows; Chandeliers; Musical Instruments, and Furniture.

*PAPER, PRINTING AND STATIONERY.

PAPER.

Paper, printing and stationery will have a grand display at the World's Columbian Exposition, and the world will be astonished to find what exquisite and useful articles in this line will be on exhibit by our own as well as other countries. In the last quarter of a century wonderful progress has been made in the mode of manufacture as well as the material that enters into the making of paper. Ordinary printing and writing stock is now manufactured of straw, clay, chemicals, wood-pulp and vegetable matter, and the daily newspapers are printed almost exclusively on paper made from wood-pulp and straw, and at one-third the price that prevailed before the war,

*Mr. Richard Ennis who has made a success of his life's work as a whole sale stationer and job printer, kindly contributed this information.

for which large quantities of material is imported from foreign countries. Although we export largely, yet owing to traditions and customs not easily effaced, we yet import considerable paper from foreign countries, especially fine copying and coated stock. It is a settled fact that excellent specimens in this line will be on exhibition from England, France, Germany and Belgium. Spain, India and Japan will also furnish an exhibit, which in lighter weights have special merit. The American Paper Makers Association, which includes most of the owners of mills in this country, will take especial pains to make their "exhibit" instructive and entertaining.

PRINTING.

Printing presses and material from our own country and foreign lands will have an exhaustive "exhibit," and the different kinds of printing and book-binding appliances will be seen in the proper department running in working order, with all modern appliances. Our press-builders will make strenuous efforts to give the best exemplifications of manufacture, in which it is acknowledged they excel. When our manufacture is placed side by side with foreign productions it remains to be seen if we can convince the world of this fact. In type-setting, machinery has become quite a factor. Of their success there is difference of opinion, although several daily papers and a few book-printing establishments now use them. It is said that \$12,000,000 to \$15,000,000 has already been spent in experiments, and that the machine of the future has yet to come. In this movement America leads all other countries, and the exhibit at the Exposition will be decidedly interesting. The United Typothetæ of America, composed of the employing printers

of North America; the National Typographical Union which includes the journeyman printers of the country, and the Pressmen's Union of the various states, have all worked to make the Printer's Exhibit both instructive and profitable to visitors, and it will well repay a visit from at least all the employing and most of the journeymen printers of the country.

STATIONERY.

Stationery will have a good exhibit at the great Columbian Exposition. Displays will be made in ink-stands, paper-weights, calendars, stamp-holders and a thousand other items entertaining to the trade. The display of writing inks, pens, pencils, manifold and duplicating apparatus will be found a profitable study, as well as new forms of account books, filing inventions and writing machines. There is no department of the Fair that will repay a visit so much as the Stationery display, and there is no business man who cannot learn from it new methods of conducting his affairs.

PRESS.

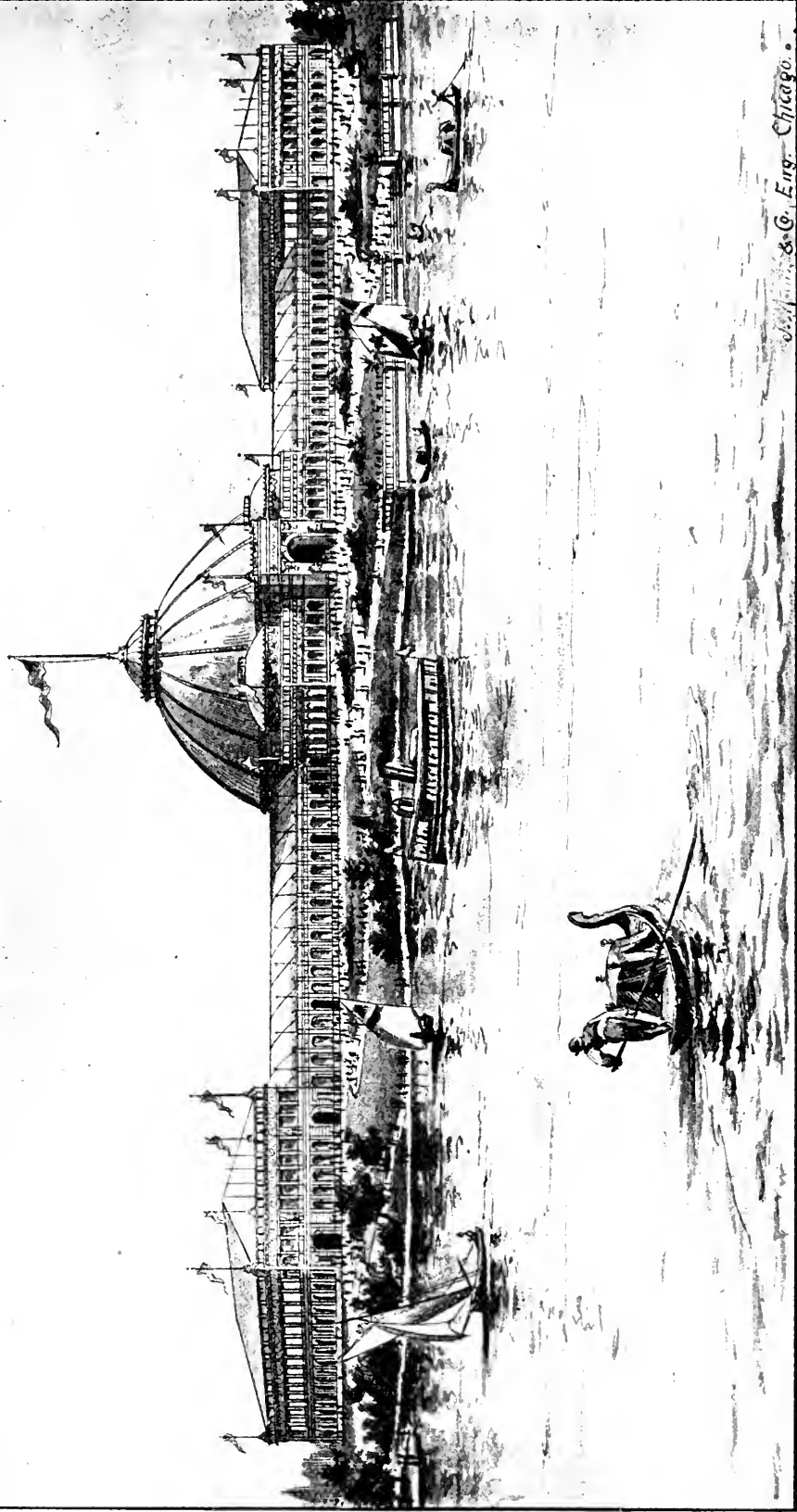
The press of both continents have a special interest in the exhibition. The Department of Publicity having in charge the advertising of the Fair has a newspaper exchange list of 2,100, and the clippings of matter average about 500 newspaper columns a week. The result of this department causes the Fair to be talked about from one end of the earth to the other.

*Cutting tools require the best quality of steel, and as reference has been made to the Mushet steel it seems in

*The above information is furnished by Mr. William McKnight, whose relation to the heavy iron and steel trade makes him familiar with the advances as they are made.

order to refer to at least one American brand—the Imperial, for instance. When brought to shape, is first hardened by heating and then chilled in water. If necessary for tempering, the process is repeated until the color of the oxide indicates a satisfactory result. But unfortunately this process, while securing the hardness also increased the undesirable quality of brittleness. The Imperial steel in its natural state is, it is claimed, harder than other steel after treatment, while its strength and tenacity remain unimpaired. The visitor to The World's Columbian Exposition will find this steel in American tools designed for heavy lathe or planer work. Park Brothers and Company (Limited), of Pittsburgh, Penn., are likely to be present in full force at the Exposition, and to offer as exhibits, tool steel, spring steel, machinery steel, safe steel, file steel, sheet steel, saw steel, plow steel, and steel for cutlery.

In the line of heavy hardware the United States and especially the Southwest will make a complete display. Such unfamiliar names as Box Pullers, Acorns, Anchor Plates, Apron Fasteners, Lazy Backs, Head Block Plates, Bull Tongue Clevises, Brake Ratchet and Plate, Celluloid Frogs, Flatters, Japanese Hair, and Moquette, are likely to confront the visitor to the Department of Machinery and Manufactures, and a little pre-vision will enable him to be so prepared as not to lose interest in the exhibits because of his self-imposed ignorance.



HORTICULTURAL BUILDING.

W. H. & G. Eng. Chicago.



THE WOMAN'S DEPARTMENT.

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LIBERAL ARTS DEPARTMENT.

THE SCHOOLS.

Chicago early took hold in earnest of the question of public education, and her facilities are unexcelled. There are to be steps taken to prevent the educational exhibit from becoming the *disjecta membra* that represented it at the Philadelphia Centennial. Visiting schools as an element of the traveler's pleasure is likely to be the preference of teachers only; but as these are very numerous there is no doubt but that the matter of education will, under the guidance of the Commissioner of Education, receive incalculable benefit. In this connection a brief but complete history of the educational movement in the United States will hardly be thought out of place.

EDUCATIONAL MILE-STONES.

The village school was a familiar sight during the time of the supremacy of the Arabs. The fame of Charle-

magne the Great rests less upon his achievements in the arena of politics and upon the field of battle than upon his interest in the establishment of schools.

Alfred the Great is no more celebrated for his beneficent interest in the welfare of his subjects than for his appreciation of education as a popular need.

The Roman Church counts among its services to humanity during the mediæval times its establishment of manastic schools and the devotion of some of its servants to the service of keeping alive the almost extinct sparks of literary life.

Great Britain and France have learned from Prussia and the United States the imperative necessity of popular instruction as a bulwark of political supremacy.

But it was reserved for the United States to realize the yet profounder truth that the public school is the only proper cradle for the infant children of a republic which requires for its own maintenance the virtues of intelligence, self-government, industry, thrift, and the substantial equality of its citizens; for "the preservation of simplicity of manners and of sobriety of judgment can alone insure soundness of growth in population and wealth."

There must be times, as at present, when unskillful pilots ignorantly or rashly desert the well-known channels for creeks and bayous and chutes, which promise to prove short-cuts. At present the politic as well as the honest and intelligent accept of the public school as an element of American progress whose absence cannot be ever so much as imagined. This leads to more or less honest attempts to use the public schools as an instrument for the accomplishment of ends the most diverse and frequently altogether foreign to its essential idea. Ignorant

but well-meaning persons confound the privilege of obtaining legal and political equality with the absolute possession of such equality as a natural endowment; and as a consequence, persons still in utter ignorance of the principles of the institutions to which we owe all our privileges, unhesitatingly assume to pronounce authoritatively upon subjects with which they have no larger acquaintance than can be derived from ignorant dogmatism or from the "views" of anonymous scribblers for the daily papers. Hence, for example, such startling contradictions as the cry that the public school course of study is overloaded, coupled with the proposition that elementary agriculture, elementary handwork, American biography, elementary psychology, or what not, shall at once be added thereto.

It is because of this temporary eruption upon the body corporate of American life that such high value attaches to an institution such as the Bureau of Education, especially when this is administered by so competent an educator as the present incumbent.

The history of popular education furnishes another striking illustration of the fundamental peculiarities of our Constitution, as well as the reason why, as a rule, the American mental energy has expended itself less in the direct creations of polite literature than upon interests which alone furnish any firm foundation for the amenities of life.

Among the first provisions made by the colonies was that of the education of the young; but naturally enough this proceeded along the lines of British tradition, so that it either founded colleges which were to furnish favored children of those of small means with the weapons ordinarily wielded by the uppermost class, or established district schools in which a baldly elementary education

was to be given those destined to become citizens of the Republic. Horace Mann was the first to recognize effectively the truth that, as our Constitution assumed an individual ability for self-government, it was absolutely necessary that sporadic instruction should be replaced by organized and systematic educational effort. There is every reason to believe that the next person representing in education what DeQuincy terms the "literature of power" as contrasted with the "literature of knowledge," was Ira Divoll, for many years superintendent of the St. Louis Public Schools, subsequently State Superintendent of Instruction for the State of Missouri, and known as the founder of the Public Library as a direct auxiliary to the school-room. Horace Mann, as a result of his efficient and long-continued labors, succeeded in inaugurating those school reforms which have rendered his name historical. Normal Schools, County Educational Conventions, Annual School Reports, and in short a thorough organization of school interests constitute Horace Mann's return to his native State, and it cannot be doubted that his own experience as one of "the people" brought home to him the great gulf between the education accepted by our Constitution as a public need, and the practical results of an education carried on without co-operation and intrusted to those whom he describes as "very good people but very poor teachers."

Ira Divoll gave validity to the distinction between Public Schools and Common Schools, insisting that public education was not a provision for the masses by the classes, but rather the American device for destroying all artificial distinctions of class, and for qualifying the young for inheriting the privileges and responsibilities of the Constitution of the United States—an inheritance

which surpassed in value the famous Magna Charta as far as the recognition of original sovereignty of the people surpasses the admission that a down-trodden but unconquered vassalage may wring from their lord-paramount the concession of a few of the rights of which have been usurped from them.

The work left for other original minds was but to defend the advanced posts already won, to articulate and rationalize the means properly to be employed for realizing the no longer doubtful purpose of public instruction. This responsibility fell upon the shoulders of such men as James B. Angell, Wm. T. Harris, Josiah L. Pickard, A. J. Rickoff, John Hancock, John D. Philbrick, Henry Kiddle, and nobly did they respond. Those intelligently interested in education will always cherish the reputations of these men as of those who "Deserve well of the Republic." For our present purpose the point to be emphasized is that these sagacious men kept always in view the wide distinction between the course of study for an institution whose main object is to qualify the young for the fullest discharge of the duties of good citizenship, and the more special aims which from their nature private schools would properly seek.

But there remained yet another and co-ordinate office which could be filled by the educational writer only, and here there was immediate response, so that through the efforts such as those of the *American Journal of Education*, opportunity was furnished alike for the widest diffusion of the results attained by the educators named above, and for the insisting in season and out of season upon the supreme claim of popular education upon the attention of all good citizens without distinction of class.

The dangers which threaten our educational institutions

are no longer those of direct attack, but the loudly professed loyalty which is used by the self-seeking political adventurer as a cloak for the crimes which he commits in the name of morality, progress, and philanthropic interest in the good of "the dear people."

The World's Columbian Exposition Congresses will form the proper supplement to the industrial, agricultural, and other material displays. These were lacking at the Philadelphia, and the evil results have been neither few nor unimportant, for the more serious questions of capital and labor, of trusts and strikes, of sharpness and reckless speculation as substitutes for intelligence and patient industry, of the diremption of religion and business morality, may be traced directly to the emphasis laid upon exaggerated industrial success.

At Chicago there will be a succession of congresses which will call intelligent attention to the world's exhibits, which will relate material progress to the other great human interests, and which enable those compelled to stay at home to possess themselves of the most concise and lucid histories of the various movements of the human mind. Thomas W. Palmer, President of the World's Columbian Exposition, is likewise Chairman of the Department of Political, Social and Economic Science, and we may reasonably expect as a result of this congress, succinct statements of the present status of the questions of suffrage, taxation, the science of statistics, and the various questions of political economy.

WOMAN'S WORK.

It will be understood that the Woman's Building is not intended to contain all the contributions of woman to the World's Columbian Exposition.

Naturally the inventions in machinery must be sought in Machinery Hall, and so of other exhibits. Illinois especially dedicated a portion of her appropriation for a woman's exhibit of artistic and general work. Illinois has the honor of making, through the creation of the Board of Lady Managers, the first legal body of women recognized by legislative enactment. At the Paris Exposition of 1889 there was a Congress of Feminine Works and Institutions, but this was more in the nature of the auxiliary college course furnished by Harvard College to women students. Ecuador and Mexico both make special displays of woman's work, the former promising to show gold and silver braid-work, woven straw, etc. Mrs. Allen, of Oregon, has wisely recommended the formation of reading circles as a necessary preparation for visiting Chicago in 1893. We trust that the reader will find that the "Historical World's Exposition and Chicago Guide" will render possible a reading circle of only one, if need be.

MANUFACTURERS.

THE COTTON INDUSTRY.

[D. C. BALL.]

One of the most interesting of all the Industrial Exhibits, is that of Cotton through all its stages.

First, there is a large line of samples of cotton from all parts of the world where it is grown. Two things strike one with astonishment in connection with these samples. One is the large number of places on the earth adapted to the cultivation of cotton, which Americans have become accustomed to consider as almost entirely an article of production of the United States,—the other is the wonderful difference there is in the samples; being from the short half-inch fibre up to the long three-inch staples, and varying equally in quality and color and in the fineness of fibre, as well as strength. This shows how largely the climate influences the products of the earth.

Then in the line of illustrating the various stages of cotton, is the cotton-field with the growing plants, and showing the plant in its various stages with its "taking on of squares," and the bloom and the bolls, and finally the ripened plant ready for picking. The plantation negroes in their quaint costumes, and with their plantation melodies, giving a faint echo of the scenes so familiar to those who are acquainted with the Southern country. Then the wonderful Cotton-picking Machine, which, its inventors hope, will as thoroughly revolutionize the cotton industry as did the invention of the cotton-gin. Then comes the gin itself, which takes the cotton in the seed, which is heaped up at one side of it, and with its sharp teeth cuts the cotton or lint from the seed, which it leaves almost bare; and then the condenser attached to the gin pours out the fleecy staple in beautiful layers, and in the condition in which cotton is probably first seen by most people. Then comes the improved baling-press, such as is used by the most progressive planters, although a great majority of them are of a smaller design and capable of much less work, many still clinging to the old mule-power press.

The cotton is then in the condition in which it is delivered in the ordinary bales to the railroad stations and smaller markets, from which it is shipped to larger markets, where after proper examination and sale it is put under the powerful compresses, which exert a pressure of from two to three millions pounds on the bale, so it is compressed very tightly, occupying less than one-half the space of the original bale. In this condition it is shipped to the mills in the East and to Europe.

The next process, which is preparing the cotton for spinning and finally weaving, is much more easily followed by watching the various machines and processes through which it passes, than it is to describe it, and is so wonderful that it will repay hours of study. The wonderful qualities of the product are exhibited in its passage through the various processes, and one is continually amazed at the precision and delicacy of the machinery which does the work.

Finally, the cloth is completed as it goes forth to the world in almost limitless quantities, and to serve unnumbered purposes.

THE DEPARTMENT OF ETHNOLOGY.

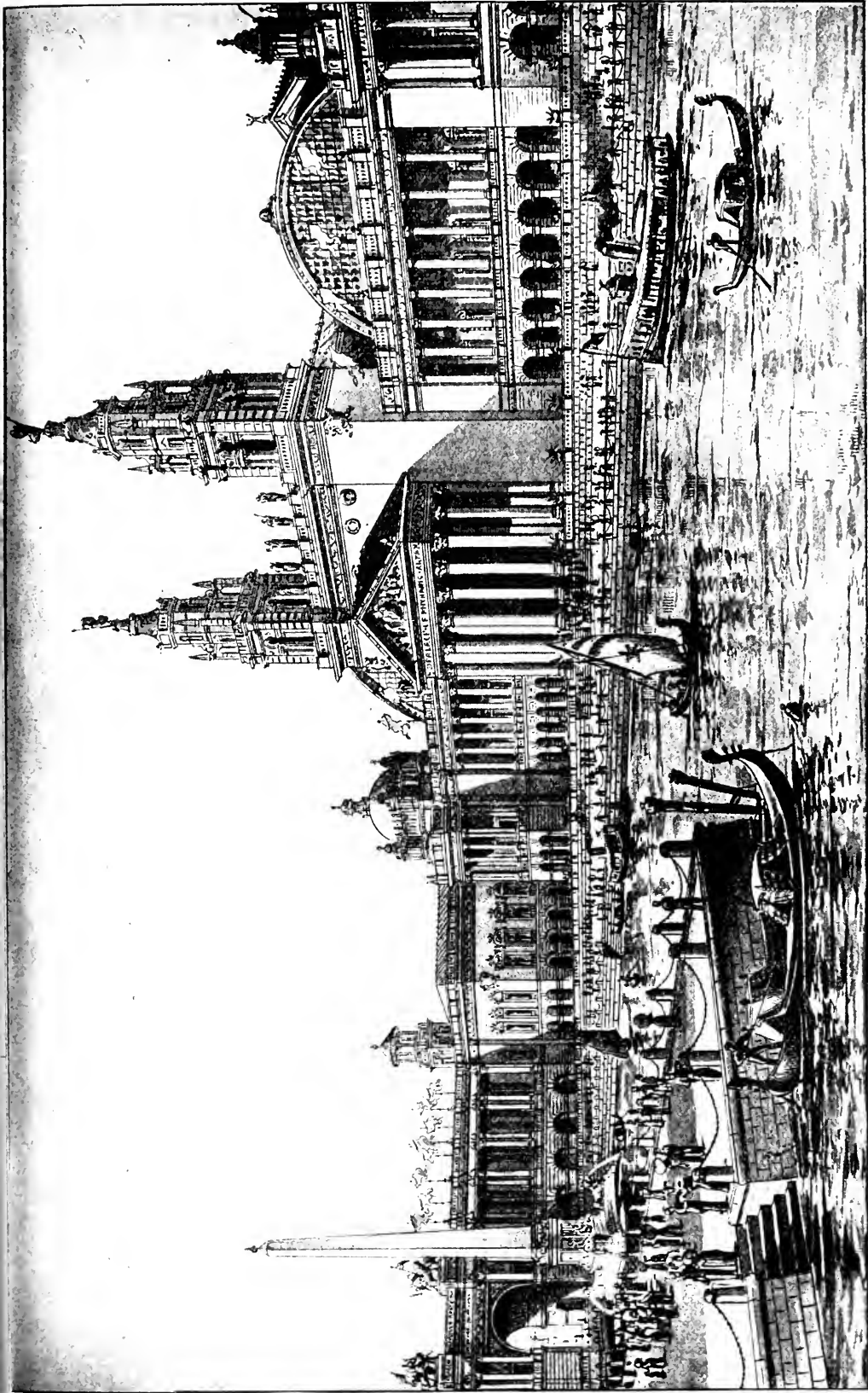
This department will have interest for the curious, as well as the highest value for the ethnologist and archaeologist. The lost civilizations of Palenque, the Aztecs, the Incas, and the Mound-builders; the singular relics of the Cliff-dwellers of Arizona and New Mexico; the almost extinct civilization, if civilization it is to be called, of the aborigines of this country; these all will have the fullest possible repre-

sensation, for Professor Putnam, the chief of the department, lacks neither for scientific information, nor for the means of conducting his investigations. The Rev. C. H. Green has made a considerable collection of the Cliff-dwellers throughout Colorado, Utah, New Mexico and Arizona. It is already known that the Eskimos, the Aleuts, the ruins of Yucatan, a rich collection of the memorials of the Mound-builders, diagrammatic paintings, a reproduction of the Temple of the Sun at Chichen-Itza, of the House of the Nuns at Uxmal, of the House at Merida. Désiré Charney's collection, a presentation of the primitive arts, object lessons in the evolution of navigation and cartography, inventions calculated to ameliorate life and labors,—these features are already assured.

Among the exciting, as well as instructive features of this display, will be a complete re-habitation of the age of the Vikings. Thousands have become familiarized with the name the Vikings through cheap but costly subscription-books which have planted ideas the most erroneous, but this exhibit will bring one into relation with the Vikings as a factor in human history.

CURIOSITIES.

Of course every great gathering such as that which will assemble for the World's Columbian Exposition stimulates those who make their living by the exhibitions of articles of popular interest, and there promises to be no dearth of these at Chicago. Lincoln's Log Cabin, and Grant's Log Cabin, will be there to enforce the lesson that the wise American "cuts his coat according to his cloth,"



MACHINERY HALL.

and prefers to rise gradually from small beginnings rather than to make a rapid descent from social Eiffel Tower.

Then there will be a reproduction of the Greek Parthenon, which will serve to vitalize the associations which, for the student of Greek history, are gathered about the building itself. The material used in this building, as in various others, will be what is called "staff." It is a French invention less than twenty years old, and is used as a cast having a lack of cloth. The ingredients of staff, it may be remarked, are dextrine, gypsum, glycerine and alumina.

There is proposed a Telescope Tower, so named from the fact that by the aid of skillfully-devised machinery the various sections of the tower are shot up into the air in a manner similar to that in which the ordinary hand-glass is extended. The dimensions are to be 400x500 feet at the base, 100 to the first landing, 75 to the second landing, 150 feet to the third landing. The visitor will be carried one-fifth of a mile into the air and given a bird's-eye view of the country.

The Chicago Columbian Tower will be 1,500x480 feet, and will have a dome 200 feet square; 13,000 tons of steel and iron will be used in its construction, and eighteen elevators, each with a capacity for fifty passengers, will run at five-minute intervals. The top will be a globe whose diameter is 33 feet, and it will be so lighted as to be visible at a distance of fifty miles.

It will be four hundred feet high and will be provided with a boulevard for carriages. At the top will be three restaurants, conducted respectively on the German, American and French plan.

The New York Central Railroad has been the owner of a Swiss depot clock whose age can be traced back at least

one hundred years, and which has been a witness of all that has passed through Albany since the road was built. It will be on exhibition at Chicago.

A French exhibitor will submit reproductions of the Santa Maria, of St. Augustine, Florida, in 1592; of Boston in 1692, and of New York City in 1792.

A Damascene Turk who made a successful exhibit at Paris in 1889, will repeat his experiment at Chicago, and will give an accurate presentation of a street in his native city so that we may see its bazaars, cafés and mosques, while transported Arabs go through all the forms of their daily life.

Among the curiosities calculated to interest the man of reflection, as well as the mere seeker after sensations, will be a complete exhibition of mines in process of being worked. There will be presented the strata through which the shafts are sunk, the apparatus used for various purposes, and the busy life which goes on in the subterranean mining camps.

Some ingenious-minded person has devised a "walking sidewalk," so that those too languid or too feeble to walk about among the various exhibits may, "for a small consideration," take his stand and have his walking done for him while he traverses three miles of fairy-land.

There will likewise be a Zoological Palace, within which it is hoped to gather the most complete representation of animal life in all zones the world over.

There is proposed a Globular Hotel. Its diameter will be 1893 feet; the various galleries will be placed respectively 250, 500, 700, 850, 1,100, and 1,300 feet from the ground. The space from the fourth gallery to the top of the building will be reserved for the use of a hotel, calculated to accommodate 10,000 persons. The top of the

tower, 1,760 feet above the ground, will be crowned by a mammoth statue of Columbus, 125 feet in height. An electrical railway will wind about the exterior of the building and form the means of communication between the guests of the hotel and the outside world.

A Steel Pavilion also is contemplated.

Proctor Steel Tower—Hexagonal, 400 feet base, 1,150 feet high; \$3,000,000. No vibration. Refectories and promenades, observatory and telescopes.

Catacombs of Paris.

Catacombs of Rome.

Catacombs of Herculaneum

Catacombs of Pompeii.

Dante's Inferno.

Mammoth Cave.

Tower of Babel.

THE ARGENTINE REPUBLIC.

The Argentine Republic has been prominent among the South American states, and has substantially accepted the American idea of progress; and it may be added the prevailing policy of finance, for its latest budget, shows a deficit of seventy-five millions of dollars, and a total indebtedness of three thousand, eight hundred and sixty-five millions of dollars. It has largely favored general education, supporting thirty colleges and normal schools, which have six thousand, seven hundred and ten students, and a teaching force of four hundred and thirty. Its public school system, includes two thousand, seven hundred and twenty-six separate schools, six thousand, two hundred and fourteen teachers, and two hundred and one thousand, three hundred and twenty-nine pupils; while the entire population of the Republic is less than four millions. It has numerous hospitals, asylums, homes, public libraries, and free art schools. Its postal service is likewise modelled upon that of the United States, and furnishes a daily European mail. The prejudices of the country in regard to the sexes, renders it a specially favorable location for such women as having taken through courses in medicine, do not prefer to expend their strength in missionary service. The Republic has been active in promoting its railway interests, and it may gratify our patriotism to know that the earliest railway, constructed in 1866, was the work of Wheelwright, a Pennsylvanian; who having been shipwrecked upon that coast in 1826, concluded to cast his lot with that people. The capitalist Samuel B. Hale, whose name became familiar to those reading lately about South American troubles of the

Baring Brothers, is likewise an American, who removed to the Republic in 1829. Immigration is encouraged, and has brought in many valuable settlers. In 1515, Juan de Solis, it will be remembered, lost his life while exploring the Rio de la Plata; and the country was visited likewise by Sebastian Cabot.

THE GROWTH OF BUENOS AYRES.

Buenos Ayres, the capitol, Mr. Curtis describes as "the Chicago of South America," with all that the name implies, for though founded as far back as 1535, by Pedro Mendoza, it has recently adopted modern eastern methods, and grown amazingly at least in largeness. Mr. Curtis, says, that in 1880, it had two universities, which rank in standing and course of study with either Yale or Harvard, and that it has abundantly provided for the higher education of women; the city of Buenos Ayres, has a flourishing board of trade, a lively stock exchange, twenty-three daily papers, and any number of banks, one of which has a paid up capital of thirty-three millions of dollars, and a deposit account of sixty-seven millions more.

The Rio de la Plata and the Parana rank among the notable streams of the world, and their confluents are numerous and considerable.

The Lake of Ybera, it will be remembered, is subterranean in its connections with the sea, reviving the Latin fable of Fount Arethusa. Great variety of striking scenery enables the republic to make definite contributions to the exhibit of interesting views, although the wonderful pampas are more familiar to the minds of our people. Everyone has heard of the Patagonian plains and the Gran Chaco, and it is reasonably certain that, through the commission appointed by the Government of

La Plata, and through the industry of the Ethnological and Archæological Department of the World's Columbian Exposition, the various objects of interest will find representation at Chicago. Gold, silver and copper abound; and iron, at first supposed to be meteoric, has been found. The zoölogical exhibit may be reinforced by the guanaco, the vicunia, the capybaro, the tapir, the cougar, the puma, the ounce, the ostrich, the bizcacha, the tuco-tuco, the armadillo and agouti,—all unfamiliar in the latitude of the United States.

The condor, the gallinazo and the caracara represent birds of prey.

Millions of hides, dried beef, tallow and wool form the staple exports, for the Pampas furnish a range for countless herds of cattle, while the few horses deserted by the Spaniards when Mendoza retired from the country, have proved to be the progenitors of droves apparently without number.

The dress and customs of the lower classes still furnish that picturesqueness which has almost disappeared in Europe, and doubtless these matters of popular interest will not be overlooked in preparing the Argentine exhibit, for which an appropriation, variously stated from \$100,000 to \$1,000,000, has been made.

For the year 1890 the republic exported goods to the value of \$9,293,856, and imported those of the value of \$5,454,618. A colony of lace makers, and one of gold and silver workers from Paraguay, are among the exhibits already assured.

THE MINES OF POTOSI.

Bolivia drew from the mines of Potosi in three hundred and fifty years, two thousand, nine hundred and four millions, nine hundred and two thousand, six hundred and

ninety dollars; so that the out-put has been considerable enough to affect the imagination of those even who feed upon stories such as those of "Colonel Mulberry Sellers."

JUAN FERNANDEZ.

The Island of Juan Fernandez still treasures the relics of Alexander Selkirk and the unfortunate Mosquito Indian who figure in DeFoe's world-famed story of Robinson Crusoe and his man Friday; possibly the Chicago World's Fair will succeed in exhibiting such of these souvenirs as admit of transport, for they would certainly find an interested audience.

BOLIVIA.

QUININE.

It is to Bolivia that we owe our knowledge of quinine, and the chincona tree received its name from the Countess Conchona who, introduced this anti-febrifuge into Spain. Furthermore, cocoaine, which has been added to the list of anæsthetics, come to us from the same South American State.

BOLIVIAN MAGNANIMITY.

The Bolivians are too large-minded a people to be a match for their enemies, and an illustrative incident is mentioned by Mr. Curtis. When the Chilians had collected an army of forty thousand soldiers for the invasion of Bolivia, they at one time were encamped where the Bolivian man-of-war, Huascar, had it in its power by destroying the water supplies to exterminate the whole force and prevent all hostilities, but the commander mag-

nanimously informed the Chilians that scorning to take advantage of their necessities he gave them their lives, and in the fullness of time he was taught the error of his ways by the onslaught on his country which the Chilians made.

Bolivia is not limited to gold; but possesses abundantly silver, the richest of tin mines, and copper.

The llama and the alpaca, the chinchilla and viscacha; the pecary and jaguar; the tapir, the glutton, the armadillo, and the sloth, are common. Vampire-bats and "a wilderness of monkeys" inhabit the forests; humming-birds, parrots and condors are numerous.

The forests furnish trees unknown to us, but useful to the Bolivians as furnishing food, shelter, and means of transportation.

Bolivia can furnish much to make real to us the scenes amidst which lived the daring Spaniards who as a mere handful of adventurers took possession of a mighty Empire, and she has likewise much to say in regard to the change from a strictly Latin civilization to that of a modern State.

Buried treasure has ever had fascination for those whom more regular industries do not attract, so that in addition to search for the sunken treasure on the Jersey coast and the unappropriated balance of Captain Kidd's pillage account, the region of Lake Titicaca will continue to attract those who pursue archæological studies when these promise a return in gold.

PUNA AND TUMBEZ.

Puna and Tumbez will remain as monuments of Pizarro's visit to the territories of Ecuador and when the oil-wells of the United States shall cease to be profit-

able to our oil-trust,—“the greatest on earth,”—the rich resources of petroleum in which Tumbes abounds, but which require for profitable development the intelligent enterprise which has converted a wild speculation into a regular industry and replaced the riotous.

BRAZIL.

Brazil is so closely connected with the history of American discovery as to be able by her contributions to The World's Columbian Exposition to bring before our eyes scenes similar to those first looked upon by the Spanish navigators. Vincente Yanez Pinzon, a pilot of Columbus on his first voyage, and himself an explorer in 1500, was the first European that set foot upon Brazilian soil, but the Portuguese title was acquired through Pedro Alvarez Cabral. For over three hundred years Brazil continued to represent Portuguese sovereignty in the new world, but in 1822 it became an independent power and but lately, as we all know, Dom Pedro, the Peter the Great of South America, was deposed. Brazil cannot transport its mountains and its valleys, its rivers and its lakes, its forests and its fields; but it can reproduce these through the cunning of the photographer's art as our own artist, Church, brought before us the Heart of the Andes. The Amazon, the Rio Francisco, the Rio Negro, the Rio Madeira, the Rio Branco, Rio Tapajos, Rio Xingu, Rio Araguay, the Tocantins, Paranaiba, the Maranhao, the Vazbarris, the Itapacura, Rio Paraguasso, the Jequitinhonha, Rio Doc, the Parahibadosul, the Parana, Rio Paraguay, the Para,

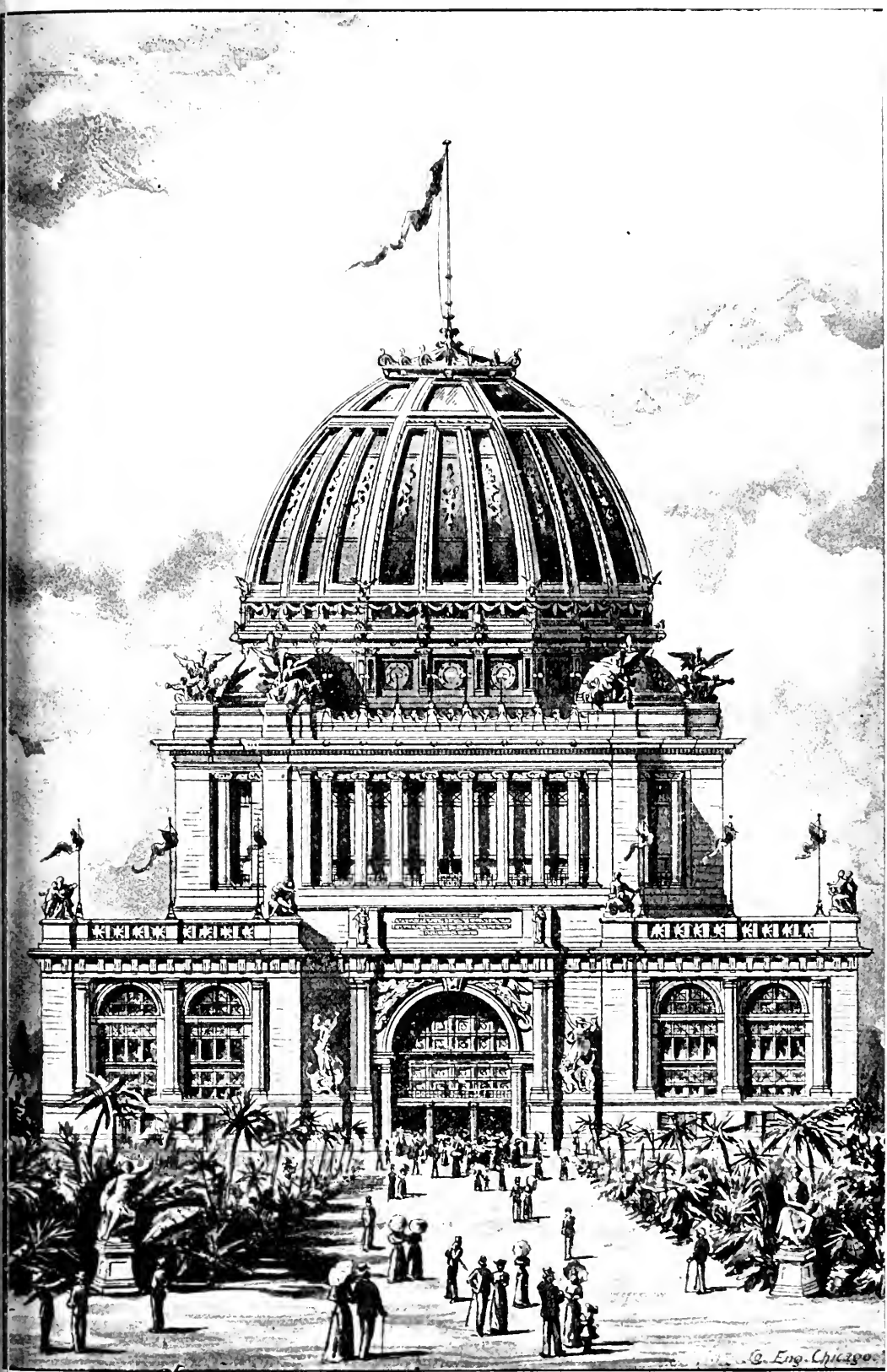
the Urcequay, Rio Iguacez, the Paránapanema, the Tita, alike in number, in magnitude, and in historical associations are among the world's wonders. The builder and the geologist may be entertained by specimens of Brazil's treasures in the direction of granite, syenite, lime-stone, sand-stone and slate. The metallurgist may examine Brazilian gold, silver and iron. The lover of precious stones may feast his eyes upon topazes and diamonds, and although the discoveries in Africa have turned the eyes of the dealers in that direction, Brazil has yet much to show.

The Agricultural Exposition will furnish an occasion for an exhibit of Brazil's wealth in horned cattle, horses and mules. The zoological displays may be re-inforced by the denizens of Brazilian forests such as the tiger-cat, the hyena, the jaguar, the sloth, the porcupine, the capybare, and the ferocious saratus. The tiny humming-birds so infinite in variety that Darwin knew personally of 400 species; the historical vulture and the gigantic emu; waterfowl; material for the snake-charmer varying from the boa-constrictor to the coral snake; the jasaraca, the surucucu and the corral snake; an entomologist display which impressed even the great Humboldt; such are the possibilities of the Brazilian natural aviaries and zoological gardens.

Brazil's exports consists of diamonds, gums, dye-woods, coffee, sugar, cotton, hides, and rich woods, and it is her intention to make such display of these as may increase the number of her markets.

Finally, Brazil has her relics and her antiquities, so that she will doubtless contribute many objects to the display made by the Ethnological and Archæological Department of The World's Columbian Exposition.

Brazil's appropriation is somewhere from \$200,000 to



ADMINISTRATION BUILDING.

\$550,000,—seemingly, official reports disagree as to the exact amount. Brazil proposes to have among her exhibits, a sugar mill, a coffee Oriental, the rubber industry, and the natives and their huts. The Botanical Garden of Brazil is unusually rich, the Director, Dr. Barboza Rodorguez, having himself discovered nearly five hundred varieties of orchids. There is but little doubt that Brazil will transplant specimens of her treasures to the Horticultural Hall at The World's Columbian Exposition.

Brazil during the year 1890 imported goods to the amount of \$60,403,804; while her exports amounted to \$9,351,081.

AN EARLY ACCOUNT OF BRAZIL.

Brazil was first discovered by Pedro Alvaro Kapialis, a Portuguese, sometime before Americus Vespucius, viz., in the year 1500. He gave it the name of Santa Cruz, which was afterwards by the Portuguese changed into that of Brazil, from the wood of the same name, which is found there in great quantity, and from thence transported into all parts of Europe for the use of dyers.

It is situated in the midst of the Torrid Zone, extending to the Tropic of Cancer and the Temperate Zone.

Concerning its extent from north to south, there is no small difference among the geographers; but according to the best computations, its beginning may be fixed under the second degree and a half of northern latitude, near River Para, and its end under the twenty-fourth degree and a half of southern latitude to the River Capitari, two leagues above the City of St. Vincent; so that its whole extent, from North to South, comprehends twenty-five degrees of 375 leagues; some place Brazil

betwixt the River of Maranhaon and Rio de la Plata. The extent of Brazil from the East (where it borders upon the North Sea), to the West, is not determined hitherto, there being very few who have penetrated so deep into the country; though its bigness from East to West may be computed to be 742 leagues; there are, however, some who extend its limits farther to the East, and to the West as far as Peru or Quiana, which makes an addition of 188 leagues; some make the boundaries of Brazil to the north the River Amazons; to the South, Rio de la Plata; to the East the North Sea, and to the West, the mountains of Peru and Quiana.

RESOURCES.

The whole district of Penambuko abounds in divers kinds of fruits and cattle. The valleys afford good pasturage, and the lower grounds near the rivers great store of sugar reeds, which are much cultivated hereabouts. The mountains produce richer minerals here than in the other captainships. During the rainy season the heat is more tolerable here in the day-time than the cold nights.

THE CHAMELEON.

The Chameleon, or Indian Salamander, otherwise called Gekko, which is not only found in Brazil, but also in the Isle of Java, belonging to the East Indies, and which by our people is called Gekko, from its constant cry (like among us, that of the cuckoo), is properly an Indian Salamander. It is about a foot long. Its skin of a pale or sea green color with red spots. The head is not unlike that of a tortoise, with a straight mouth. The eyes are very large, starting out of the head with long and small eye-apples. The tail is distinguished by several

white rings, its teeth are so sharp as to make an impression even upon steel. Each of its four legs have five crooked claws armed on the end with nails. Its gait is very slow, but wherever it fastens it is not easily removed. It dwells commonly upon rotten trees, or among the ruins of old houses and churches; it oftentimes settles near bedsteads, which makes sometimes the Moors pull down their huts.

Its constant cry is Gekko, but before it begins it makes a kind of hissing noise. The sting of this creature is so venomous that the wound proves mortal unless it be immediately burnt with a red-hot iron or cut off. The blood is a palish color, resembling poison itself.

POISON.

The Jareneses used to dip their arrows in the blood of this creature; and those who deal in poisons, among them (an art much esteemed in the Island of Java by both sexes) hang it up with a string tied to the tail on the ceiling, by which means it being exasperated to the highest pitch, sends forth a yellow liquor out of its mouth, which they gather in small pots set underneath, and afterwards coagulate into a body in the sun. This they continue for several months together by giving daily food to the creature. It is unquestionably the strongest poison in the world, being of so corrosive a quality that it not only raises blisters wherever it touches the skin, but turns the flesh black and causes a gangrene. The inhabitants of the East Indies say, that the best remedy against this poison is the Curcumil Root. Such a Gekko was got within the body of the wall of the church in the Receif, which obliged us to have a great hole made in the said wall to dislodge it from thence.

RATTLE SERPENTS.

There are also several sorts of serpents in Brazil, such as rattle serpents, double-headed serpents, and such like; of which the Brazilians enumerate twenty-three,—viz. : Brigracu, or Liboya, Arabo, Bioby, Boicinga, Boitrapo, Boykupekanga, Bapoba, Kukuruku, Kaninana, Kurukakutinga, Grinipaiaguara, Ibiara, Jakapekoaja, Ibiboboca, Jararaka, Mianma, Vona, Tarciboya, Kaka-boya, Amorepinima.

We will give you an account only of those only that dwell in the houses and woods of Penambuko, passing by the rest, as not so well known among us; and it is observable, that though some of the American or Brazilian serpents exceed those of Europe in bigness, they are nevertheless not so poisonous

KASCAREDA.

The serpent of Boicinga, or Boicinga, likewise called boiguira, by the brazilians, is by the Portuguese called kascareda and tangedor, *i.e.*, a rattle, and by our people a rattle-serpent, because it makes a noise with its tail, not unlike a rattle. This serpent is found upon the highway and in desolate places; it moves with such swiftness as if it had wings, and is extremely venomous. In the midst it is about the thickness of a man's arm near the elbow, but grows thinner by degrees toward the head and tail. The belly and head is flattish, the last being of the length and breadth of a finger and a half, with very small eyes. It has four peculiar teeth longer than all the rest, white and sharp like a thorn, which it hides sometimes within the gums. The skin is covered with thick scales, those upon the back being somewhat higher than the rest, and of a

pale, yellowish color, with black edges. The sides of the body are likewise yellowish, with black scales on each side, but those upon the belly are larger, four-square and of a yellow color. It is three, four and sometimes five feet long; has a round tongue split in the middle, with long and sharp teeth. The tail is composed of several loose and bony joints, which make such a noise that it may be heard at a distance. Or rather, at the end of the tail, is a long piece consisting of several joints joined within one another in a most peculiar manner, not unlike a chain. Every year there is an addition of one of these joints, so that you may know the exact age of the serpent by their number, nature seeming in this point to have favored mankind as a warning to avoid this poisonous creature by this noise. One of these joints, put in the fundament, causes immediate death, but the sting of this creature proceeds much slower in its operation; for, in the beginning, a bloody matter issues from the wound, afterwards the flesh turns blue, and the ulcer corrodes the adjacent parts by degrees.

The most sovereign remedy used by the Brazilians against the poison of this and other serpents is the head of the same serpent that has given the wound, which they bruise in a mortar and in form of a plaster apply it to the affected part. They mix it commonly with fasting spittle, wherewith they also frequently moisten the wound. If they find the poison begins to seize the nobler parts, they use the Tiproka as a cordial and afterwards give strong sudorifics. They also lay open the wound and apply cupping-glasses to draw the venom from thence, or else they burn it with a red-hot iron.

KUKURUKU.

The serpent Kukuruku is an ash color, with yellow spots within and black speckles without, and has just such scales as the rattle-serpent.

GUAKU.

The serpent Guaku or Liboya, is questionless the biggest of all serpents; some being 18, 24, nay, 30 feet long, and of the thickness of a man in the middle. The Portugueses call it Kobredebadó or the roebuck serpent, because it will swallow a whole roebuck or any other deer it meets with; and this is performed by sucking it through the throat, which is pretty narrow, but the belly vastly big. After they have swallowed such a deer they fall asleep and so are caught. Such a one I saw near Paraiba which was 30 feet long, and as big as a barrel. Some negroes saw it accidentally swallow a roebuck whereupon 13 musqueteers were sent out, who shot it and cut the roebuck out of its belly. It was of a grayish color, though others are inclining more to the brown. It is not so venomous as the other serpents. The negroes and Portugueses, nay, even some of the Dutch eat the flesh; neither are its stings looked upon as very infectious, the wound healing up often without any application of remedies; so that it ought not to be reckoned among the number of poisonous serpents, no more than the Kaninana, Marina and Vocia. This serpent being a very devouring creature, greedy of prey, leaps from amongst the hedges and woods, and standing upright upon its tail, wrestles both with men and wild beasts; sometimes it leaps from the trees upon the traveler, whom it fastens upon, and beats the breath out of his body with his tail.

JARARAKA.

The serpent Jararaka is short, seldom exceeding the length of an arm to the elbow. It has certain protuberant veins on the head like the adder, and makes much such a noise. The skin is covered with red and black spots, the rest being of an earth color. The stings of this creature are as dangerous and attended with the same symptoms as those of other serpents. Its body, the head, tail and skin being, before taken away, together with the entrails, boiled in the water of the root of Jurepeba, with salt, dill, and such like, is looked upon as a very good remedy.

BOITRAPO.

The serpent Boitrapo, called by the Portuguese Cobre de Cipo, is about seven feet in length, of the thickness of a man's arm, feeds upon frogs, and is of an olive color; it is very venomous, and when it stings occasions the same symptoms as the serpent Kukuruku; nay, the wound is accounted past curing, unless you apply the hot iron,

IBIARA.

The adder Ibiara, by the Portuguese called Cobra Vega, or Cobra de das Cabecas, *i. e.*, the double-headed serpent, because it appears to have two heads, which, however, is not so. They are found in great numbers, lurking in holes under ground. They feed upon pismires; are of the thickness of the length of a finger, and a foot and a half long, of a silver color; nothing is more poisonous than the stings of these creatures, though not beyond all hopes of cure, provided the before-mentioned remedies be applied in time. The serpent by the Brazilians

called Ibiboboka, the Portuguese call Cobra de Corais. It is very beautiful, of a snow white color, speckled with black and red spots, and about two feet long; its sting is mortal, but kills by degrees.

BIOBI.

The serpent Biobi, called by the Portuguese Cabro Verde, or the "green serpent," about three-quarters of a yard long, and the thickness of a thumb; of a shining green color, It lives among houses and hurts nobody unless when provoked, Its sting is, however, full of poison and scarce curable. A certain soldier being wounded by one of these creatures, which lay hidden in a hedge, in his thigh, did, for want of proper remedies, die in a few hours after; his body swelled and turned pale blue.

KANINANA.

The serpent Kaninana is yellow on the belly and green on the back; its length is about eight hands, and is looked upon as the least venomous of all. It feeds upon eggs and birds, and the negroes and Brazilians eat the body after they have cut off the head and tail.

THE IBIRAKOA.

The serpent called by the Brazilians Ibirakoa, is of several colors, with white, black and red spots. The sting of this creature is very poisonous, attended with the same symptoms as that of Kukuruku; for it kills infallibly, unless proper remedies be applied immediately. If the poison has not seized the heart, they boil the flesh of the same serpent with certain roots, and give it to the patient in wine.

THE TARCIBOYA.

The serpents Tarciboya and Kakaboya are amphibious creatures. The first is of a blackish color, very large, and stings when provoked, but is not very difficult to be cured. The Kakaboya is of a yellowish color, six hands long, and feeds upon tame fowl.

OF THE SENEMBI, OR THE LEGUAN.

Not only in the captainship of Pernambuko, but also all over Brazil and America; as likewise in the isle of Java in the East Indies, are a certain kind of land crocodile, called by the Brazilians, Senembi; by our people Leguan. Some are larger than others, some being three, others four feet long, but seldom exceeding five; they are all over covered with scales, which are somewhat bigger on the back, legs and beginning of the tail, than on other parts; the neck is about a finger and a half long, the eyes are black and bright, and the nostrils in the hindermost part of the head. Each jawbone is full of small, black and short teeth; the tongue is very thick; all along the back from the neck to the tail are small, sharp teeth of a greenish color; they are biggest on the neck, and grow smaller and smaller towards the tail; under the throat are likewise many of the same kind. The whole skin is of a delicate green, with black and white spots. It has four legs and feet, with five claws armed with very sharp nails; it can live two or three months without food. Its flesh is as white as that of a rabbit and of as good a taste as that of fowls or rabbits if it be broiled or well fried with butter. In the head of this creature are certain stones, which are an infallible remedy to break and drive the gravel out of

the kidneys, given to the quantity of two drachms at a time, or carried on some part of the body.

EATING LIZARDS.

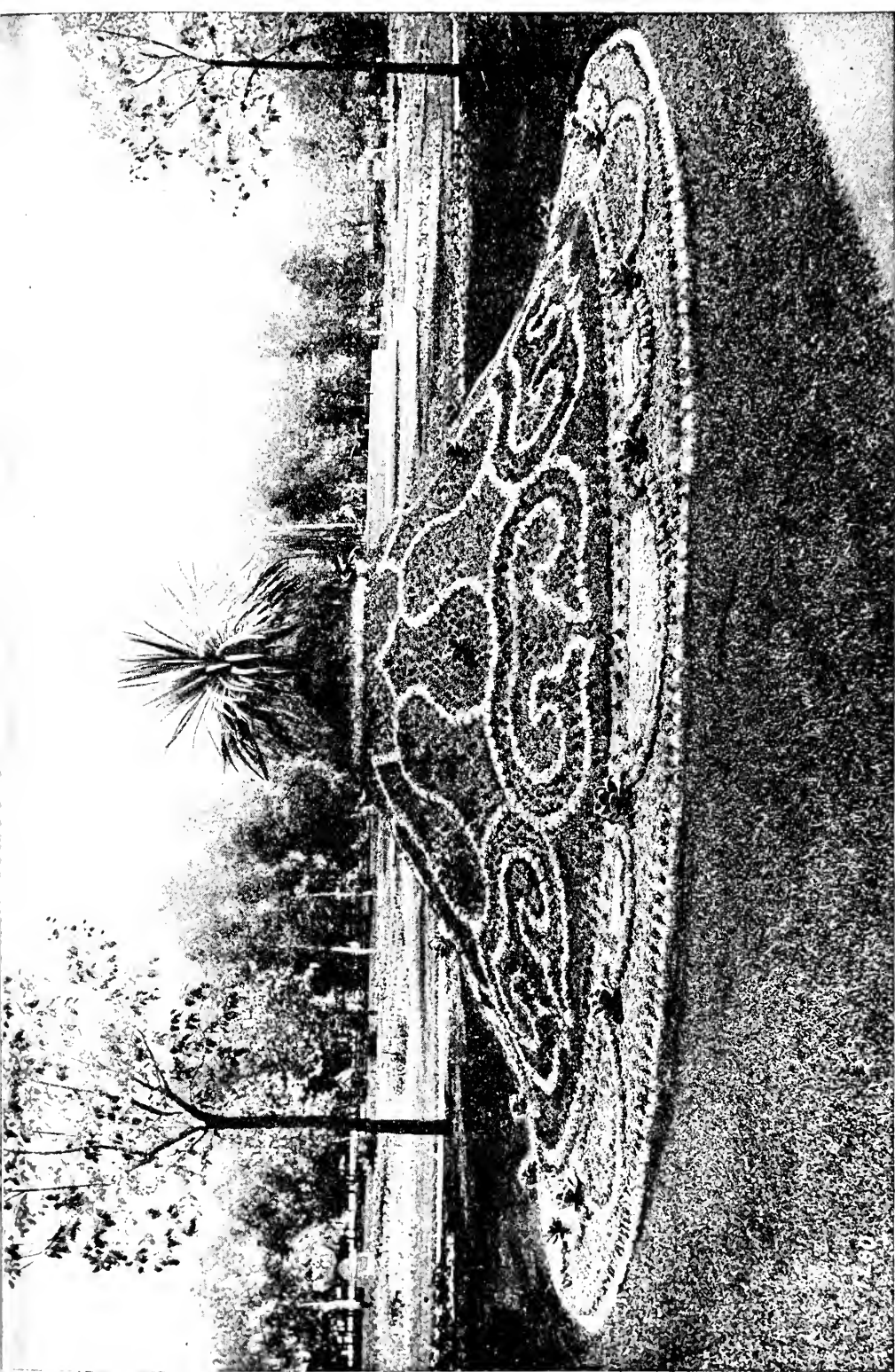
There are in Brazil lizards both great and small; some are green, others greyish, and some four feet long, with sparkling eyes. The negroes feed upon some of them, whom they kill with blunt arrows; they broil them after they have skin'd them, and eat them without the least harm. Among all those that are found among the thorns and bryars, or the ruins of houses, there is but one kind venomous, which is called Bibora. They are like the others, but lesser, not exceeding the bigness of a thumb; they are of an ash color, inclining to white; the body and limbs thick and swelled with the poison, but the tail short and broad. The wounds given by them are full of a thin, stinking matter, with blue swellings, with a pain near the heart and in the bowels.

THOUSAND LEGS.

There are also certain creatures called Thousand Legs, as likewise Hundred Legs, by the natives called Ambua, who bend as they crawl along, and are accounted very poisonous. The first are commonly found in the houses, and the last among the woods, where they not only spoil the fruits of the earth, but also plague men and beasts.

JAACIAURA.

Scorpions, by the Brazilians called Jaaciaura, are found here in great numbers, being in shape like the European scorpions, but not so pestiferous, and consequently the wounds given by them are easily cured. They lurk in houses, behind old stools, benches and chests. They are



MOUND OF FLOWERS, LINCOLN PARK.

exceedingly big, no bigger being to be found in any other parts, some being five or six feet long and of a considerable thickness.

ANTS.

There are such prodigious quantities of pismires in Brazil, that for this reason they are called by the Portuguese, *Rey de Brazil*, *i. e.*, King of Brazil. They eat all that lights in their way, as fruit, flesh, fish and insects without any harm. There is also a certain flying pismire of a finger's length, with a triangular head, the body being separated into two parts, and fastened together by a skull string. On the head are two small and long horns; their eyes being very small; on the foremost part of the body are six legs, three joints each, and four thin and transparent wings, to-wit, two without and two within; the hindermost part is of a light brown color and round, which is eaten by the negroes. They dig into the ground, like the moles, and consume the seed.

There is another kind of great pismires, resembling a great fly, the whole body of which is about the length of half a finger, and separated into three several parts. The last part resembling in shape and bigness a barley corn; the middlemost, of an oblong figure, with six legs, half a finger long, each of which has four joints; the foremost part, or the head, is pretty thick, in the shape of a heart, with two horns, and as many black, crooked teeth; the white of the eyes is inclining to the black, the whole composition of the head being the two eyes, placed opposite to one another, resembling the figure of a heart. The fore and hindermost parts are of a bright red color. There is another kind of pismire, of a bright black color, with black and rough legs. It is about the length of a

finger, with a large, four-square head, starting black eyes and teeth, and two horns, half a finger long. The body is also separated into three parts; the foremost of an oblong figure, not very thick, with six legs, each of the length of half a finger; the middlemost very small and square, not exceeding the bigness of a louse; the hindermost is the biggest of the three, of an oval figure and sharp on the end. These three parts are fastened together with a single string; the Brazilians call it Tapijai.

There is besides this another pismire, called by the Brazilians Kupia, of a chestnut brown color, its head being as big as another pismire, with black eyes, two horns, and two tusks instead of teeth. The whole body is covered with hair; it is divided into two parts, the foremost with six legs, being somewhat less than the hindermost; at certain seasons it gets four wings, the foremost being a little bigger than the hindermost, which it loses again at a certain time.

THE IRON PIG.

The Iron Pig of Brazil, called by the Brazilians Kuandu, and by the Portuguese Ourico Kachiero, is of the bigness of a large ape, its whole body being covered with sharp spikes, of three or four fingers long, without any hair. Towards the body these spikes are halfways yellowish, the remaining part is black, except the points, which are whitish, and as sharp as an awl. When they are vexed, they are able, by a certain contraction of the skin, to throw or dart them with such violence that they wound, nay, sometimes kill men or beasts. Their whole body, to measure from the hindermost part of the head to the beginning of the tail, is a foot long, and the tail a foot and five inches in length, which likewise has halfways

sharp spikes, the rest being covered with bristles, like other hogs. The eyes are round, starting and glistening like a carbuncle; about the mouth and nose are hair of four fingers length, resembling those of our cats or hares; the feet are like those of apes, but with four fingers only, without a thumb, instead of which you see a place vacant, as if it had been cut away. The fore legs are less than the hindmost; they are likewise armed with spikes, but not the feet.

This creature commonly sleeps in the day time and roves about by night; it breathes through the nostrils, is a great lover of fowl, and climbs up the trees, though very slowly. The flesh is of no ungrateful taste, but roasted and eaten by the inhabitants. It makes a noise Jii, like the Luyaert.

AL.

That four-legged creature, by the Brazilians called Ai, by the Portuguese, Priguiza. and by the Dutch, Luyaert (Lazy-back), from its lazy and slow pace, because in 15 days time it scarce walks above a stone's throw. It is about the bigness of a middle-sized fox, its length being a little above a foot, to measure from the neck (which is scarce three fingers long) to the tail. The fore legs are seven fingers long to the feet, but the hindmost about six; the head round, of three fingers in length; its mouth, which is never without a foam, is round and small, its teeth neither large nor sharp. The nose is black, high and glib, and the eyes small, black and heavy. The body is covered all over with ash-colored hair, about two fingers long, which are more inclining to the white towards the back; round about the neck, the hair is somewhat longer than the rest. It is a very lazy creature, unable to undergo any fatigues,

by reason its legs are, as it were, disjointed in the middle; yet it keeps upon the trees, but moves, or rather creeps along very slowly. Its food is the leaves of the trees, it never drinks, and when it rains hides itself. Wherever it fastens with its paws it is not easily removed; it makes, though seldom, a noise like our cats.

THE ANT-EATER.

The Pismire-Eater is thus called, because he feeds upon nothing but pismires; there are two forts—the great and the small; the Brazilians call the first Tamanduai, and the last Tamanduai-Guacu. It is a four-legged creature of the bigness of a dog, with a round head, long snout, small mouth, and no teeth. The tongue is roundish, but sometimes twenty-five inches, nay, two feet and a half long. When it feeds, it stretches out its tongue upon the dunghills, till the pismires have settled upon it, and then swallows them. It has round ears and a rough tail; is not nimble but may be taken with the hand in the field. The small one called Tamanduai-Guacu, is of the bigness of a Brazilian fox, about a foot in length. On the forefeet it has four crooked claws, two big ones in the midst, and the two lesser on the sides. The head is round, yet pointed at one end, a little bent below, with a little black mouth without teeth. The eyes are very small, the ears stand upright about a finger's length. Two broad black lists run along on both sides of the back; the hairs on tail are longer than those on the back; the extremity of the tail is without hair, wherewith it fastens to the branches of the trees. The hairs all over the body are of a pale yellow, hard and bright. Its tongue is round, and about eight fingers long. It is a very savage creature, grasps everything with its paws, and if you hit it with a

stick, sits upright like a bear and takes hold of it with its mouth. It sleeps all day long, with its head and forefeet under the neck, and roves about in the night time. As often as it drinks the water spouts forth immediately through the nostrils.

They have also a kind of serpents of about two fathoms long, without legs, with a skin of various colors, in the middle resembling two arrows, and the poison is hid in a bladder in its tail.

THE TATU.

The four legged creature called by the Brazilians, Tatu and Tatupera; by the Spaniards, Armadillo; by the Portuguese, Encuberto, and by the Dutch, Schilt-Verken (shield-hog), because it is defended with scales like as with an armor, resembling in bigness and shape our hogs; there are several sorts of them. The uppermost part of the body, as well as the head and tail, is covered with bony shields, composed of very fine scales. It has on the back seven partitions, betwixt each of which appears a dark brown skin. The head is altogether like that of a hog, with a sharp nose, wherewith they grub underground; small eyes, which lie deep in the head; a little but sharp tongue; dark brown and short ears, without hair or scales, the color of the whole body inclining to the red; the tail in its beginning is about four fingers thick, but grows by degrees sharp and round to the end, like those of our pigs; but the belly, the breast and legs are without any scales; but covered with a skin not unlike that of a goose and whitish hair of a finger's length. It is generally very bulky and fat, living upon maloens and roots, and does considerable mischief in the plantations. It loves to root under ground, eats rabbits and the dead carcasses

of birds, or any other carrion; it drinks much, lives for the most part upon the land, yet loves the water and the marshy places; its flesh is fit to be eaten. It is caught like the doe in Holland with the rabbits, by sending a small dog ahead, who by his barking gives notice where it lurks under ground, and so, by digging up the ground, it is found and caught.

BATS.

The bats in Brazil, called by the inhabitants, Hudi-rika, are of the bigness of crows; they are very fierce, and bite most violently with their sharp teeth. They build their nests in hollow trees and holes.

IPEKATI.

The bird called by the Brazilians, Ipekati Apra, by the Portugese, Pata, is no more than a goose; and for that reason by the Dutch called a wild-goose. It is of the bigness of one of our geese of about nine months old; and in all other respects resembles them. The belly and under-parts of the tail, as likewise the neck, is covered with white feathers; but on the back to the neck on the wings and head the feathers are black, intermixed with some green. There are also some black feathers intermixed with the white ones on the neck and belly. They differ from our geese in this, that they are somewhat bigger; their bills resembling rather those of our ducks, but are black and turned at the end, and on the top of it grows a broad, round and black piece of flesh, with white speckles. They are commonly found near the river-side, are very fleshy and well-tasted.

TOUKAN.

The bird by the Brazilians called Toukan (or large-bill) is about the bigness of a wood-pigeon. It has a large crop, about the breadth of three or four fingers in compass, of a saffron color, with high, red-colored feathers round the edges, which are yellow on the breast but black on the back and all the other parts of the body. Its bill is very large, of the length of a palm of the hand, yellow without and red within. It is almost incredible how so small a bird is able to manage so large a bill, but that it is very thin and light.

KOKOI.

The bird called by the Brazilians, Kokoi, is a kind of a crane, very pleasing to the sight, as big as our storks. Their bills are straight and sharp, about six fingers in length, of a yellowish color, inclining to green. The neck is fifteen fingers long, the body ten, the tail five; their legs are half-ways covered with feathers, about eight fingers in length, the remaining part being six and a half. The neck and throat is white, both sides of the head black, mixed with ash-color. On the far and undermost part of the neck are most delicious white, long and thin feathers, fit for plumes; the wings and tail are of an ash-color, yet mixed with some white feathers. All along the back you see long and light feathers, like those on the necks, but are of an ash-color; their flesh is very good, and of a grateful taste. There is another kind of these birds, which is somewhat bigger than a tame duck. Its bill is straight and sharp at the end, of the length of four fingers and a half, with a double set of teeth, both above and below; the head

and neck (which is two feet long) resembles the crane, with black eyes enclosed in a gold-colored circle. The body is two feet and a half in length; the tail, which stands even with the extremity of the wings, four fingers. The bill is of an ash color towards the head, the rest yellow, inclining to green. The head and upper part of the neck are covered with long, pale yellowish feathers, intermixed with black. On the back and wings it has ash-colored feathers, inclining to yellow; but the legs and feet are dark grey; the flesh of this bird is eatable, and tastes like that of a crane.

JABIRA.

The bird called by the Brazilians, Jabira Guaku, and by the Dutch, Schnur Vogel (or Barn Bird), has no tongue, but a very large bill near seven foot and a half long; round and crooked, towards the end, of a grey color. On the top of the head is a crown of white and green feathers. The eyes are black, behind each of which are two great concavities instead of ears. The neck is ten fingers in length, one-half part of which as well as the head, is not covered with feathers, but with an ash colored, whitish, rugged skin. This bird is of the bigness of a stork, with a short, black tail, which stands even with the extremities of the wings. The other part of the neck and the whole body is covered with white feathers, and those on the neck very long ones; the wings are likewise white, but mixed with some red. The flesh, if boiled, after the skin is taken off, is good food, being very white but somewhat dry.

BAMODI.

Brazil produces incredible quantities of other wild-fowl, of all sort, both great and small, some of which live

among the woods, others in the water, but are very good food.

Of the best kind are the thrushes, called by them Bamodi; pheasants of divers kind, called by the barbarians, Makuagu, Jaku and Arakua.

MONTON.

Monton is a bird of the bigness of a peacock, but has black feathers; the flesh is very good and tender. Because this country is full of fruit trees and woody places, it produces abundance of sparrow-hawks and other hawks, called by the Portuguese, Guavilon, and by the Brazilians, Teguate and Inage, which are always at enmity with the chickens and pigeons.

Among those that live both in the water and upon the land, the wild ducks claim the preceding; some of those are smaller than the European ducks, others much exceed them, being as big as a goose. They have also a sort of snipe, called Jakana Miri and Jakana Guaku. Besides these there are cranes, quails and ostriches, and many others of that kind; the flesh of which is eatable, but not very toothsome.

The rest of these birds are very greedy after the amber-grease, which is thrown ashore by the boisterous sea, which they devour before the inhabitants can come thither to gather it.

PARRAKEETS.

They have also abundance of Parrakeets, or small parrots. These never speak; but their parrots are extraordinarily fine and large, some of which learn to speak as distinctly as a man. I have seen some of these parrots express everything that they heard cried in the streets very

plainly; and among the rest, I saw one which, if put in a basket upon the floor, would make a dog, that belonged to the same house, sit up before the basket, crying out to him, "sit up, sit up, you nasty toad." Neither did this parrot leave off calling and crying till the dog came to sit up before the basket. It was afterwards presented to the queen of Sweden.

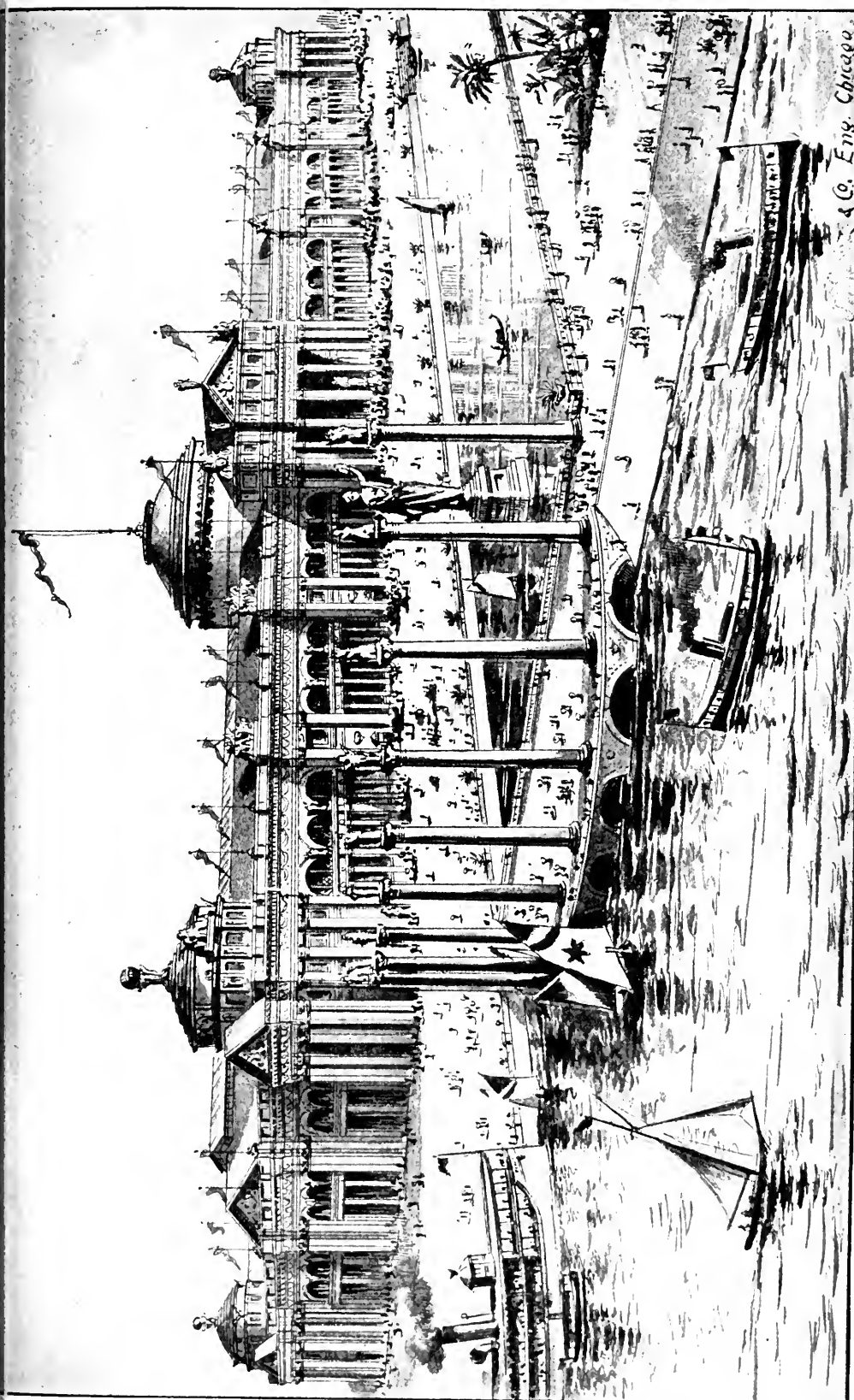
HUMMING-BIRDS.

There is among the rest a certain small bird, no bigger than a joint of a finger, which, notwithstanding this, makes a great noise, and is caught with the hands whilst it is sitting among the flowers, from whence it draws its nourishment. As often as you turn this bird the feathers represent a different color; which makes the Brazilian women fasten them with golden wires to their ears as we do our ear-rings. The birds here are never destitute of food, which they always meet with either among the flowers or fruits of the trees, which are never spoiled here during the winter season.

FISH.

The rivers and lakes of Brazil as well as the neighboring sea, furnishes them with great store of all sorts of fish, which are accounted so wholesome here that they are even allowed for those that are troubled with agues. The standing waters near the sea-side which sometimes are quite dried up, produce abundance of craw-fish, tortoises, shrimps, crabs, oysters, and divers others of this kind, which are all very good food.

There are abundance of fish in Brazil common to the sea and rivers; especially during the rainy season, when a great quantity of the river water being conveyed into the sea, the sweetness of the water allures the fish into



AGRICULTURAL BUILDING.

W. & O. Eng. Chicago.



the rivers, where meeting with abundance of green weeds (the product of the bottom of the rivers) they never return to the sea.

Among the river fish the chiefest are the Duja, Prajuba, and Akara Puku, the last of which resembles the best and largest of our perches.

Brazil produces also various kinds of insects, some of which are of four fingers' length, and an inch thick. They have likewise silkworms, called by the Brazilians, Isokukus, and their silk, Isokurenimbo.

FIRE-FLIES.

There are also divers sorts of fire-flies, which are likewise found in the East Indies, where we shall give you a further account of them. Besides these, there are many sorts of other flies, hornets, wasps, and bees, some of which produce honey, some none at all.

Among other kinds of spiders there is one of a prodigious bigness, which is always found either in dunghills, or in the concavities of hollow trees. They call it Uhanduguaka. These creatures weave cobwebs like other spiders, the skin is rough and black, provided with sharp and long teeth. This creature, if provoked, wounds with its poisonous sting (which is so small as scarce to be visible) and raises a bluish tumor, which is very painful, and if care be not taken in time, occasions an inflammation, attended with such dangerous symptoms as prove afterwards incurable.

CRICKETS.

Near Rio St. Francisco are vast numbers of a certain small insect not unlike our crickets. I have been very curious to get sight of this creature, to satisfy myself as

to its shape and resemblance to others of this kind; but though it makes a very shrill noise, which resembles that of our crickets, I was never able to see any of them; for as soon as you approach they desist, so that you are at a loss which way to look. They sing sometimes for a quarter of an hour without intermission. In the Island of Java, in the East Indies, it is commonly heard in the months of February and June. At last I had the good fortune to get one of these creatures into my hands, by means of a certain Chinese woman, after I had often been in search of it, both within and without the city of Batavia. The Javanese set two of these little creatures a-fighting together and lay money on both sides, as we do at a cock-match.

TIGERS.

There are also abundance of ravenous wild beasts in Brazil, such as tigers, leopards, etc. The tigers are extremely savage here; they fall upon beasts, and sometimes upon men, of whom several were killed by them in my time. A certain Portuguese had a sugar mill very pleasantly situated near a wood whither we used to go to divert ourselves sometimes. The Portuguese sitting one time with four of his friends in the house, with the windows drawn up, for the conveniency of the land-air, a dog belonging to the house, who had ventured too far into the adjacent wood, was pursued by a tiger, so that to save his life he leapt into the window to seek for shelter near his master, but the tiger closely pursuing him, leapt also through the window into the room, where, the door being shut, he tore two of those there present in pieces before the rest could make their escape, and afterwards went his way.

JACK BEYOND THE SEA.

There is another sort of savage beast in those parts, called by some of our people Jan-over-Zee (or Jack beyond the sea), which surpasses all others in nimbleness, and tears all to pieces it meets with.

BUTTER.

Brazil has also great plenty of cattle, but the flesh will not keep above 24 hours after it is dressed. The Dutch cut off the fat and cut the lean in thin slices and dry it in the sun like fish. No butter is to be made here, because the milk turns to curds immediately; the Dutch butter is drawn out of a vessel like oil.

CAPIVARA.

Their hogs are small and black, but very well tasted and wholesome. There is another kind of amphibious hogs, by the Portugues called Kapivarres. They are very near as black as the others, and good food.

ANTES.

There is another four-legged creature in Brazil, called by the inhabitants Taperete, and by the Portuguese, Ants. Its flesh has the taste of beef, but somewhat finer. It is about the bigness of a calf but shaped like a hog; it sleeps all day among the woods and seeks for belly-timber in the night; its food is grass, sugar-reeds, cab-bages and such like.

PAKAS.

They have likewise a good store of goats, called by them Pakas and Kotias, and Hares and Rabbits, which

don't give way in goodness to those of Europe. There is also an excellent kind of lizards, called by the inhabitants Vuana and Teju, which are accounted a dainty bit.

FISIL.

The fish in Brazil are no less considerable for the supply of our plantations than the cattle which are on the coasts of Brazil, but especially in Pernambuko, where they are found in such plenty that at one draught they catch sometimes 2,000 or 3,000 fine fish in the four or five summer months; for during the rainy season, they catch but few. There are certain districts along the sea coast whither the fish most resort. Some of those belong to the inhabitants, the rest to the company, and are farmed at a certain rate per annum. The lakes, as well as bays, are stored with an incredible multitude of fish; the first are by the Portuguese, called Alagras; and the best they produce are the Lindia, Queba, and Noja, all without scales, and though the fish which are caught in the lakes are not so much esteemed as the river fish, nevertheless they are not much behind them in goodness, because these lakes are not always standing waters, but intermixed with several rivers. Some of these fish they dry in the sun. The chiefest of this kind are those called by the Brazilians, Kurima Parati, and by the Dutch inhabitants Herders. They abound no less in sea-fish of all sorts. The fish called by the Brazilians, Karapantangele, which is not unlike our perch, has the preference among them. And as the rivers furnish infinite numbers of fish, so they are generally fatter and better tasted than the sea-fish. Those which are caught in those fisheries near the sea-shore, are for the most part salted and carried from thence into the country, for the use of

the sugar-mills, which cause great plenty among them.

The crawfish, which are in great quantities near the rivers, and in the marshy grounds, serve likewise for food to the Brazilians and negroes, and some of our people like them tolerably well.

It is further to be observed, that whereas a considerable number of cattle, during the war, was run astray out of the parks into the forests and woods beyond the river of St. Francis, it was thought convenient by the great council of the company here, to agree with certain persons to catch these cattle, and bring them to the receif, in order to secure maintenance, without a yearly supply from Europe, as well of eatables as other commodities, as has been found by experience, to the great detriment of the company, after our store-houses were exhausted by the several expeditions against Angola, Maranhaon, and other places.

CROCODILES.

In the rivers and lakes here are also found crocodiles, by the Brazilians called Jakare, and in the East Indies Kayinans. They are like the African crocodiles, but not quite so big, seldom exceeding five feet in length. They lay twenty or thirty eggs, bigger than geese eggs, which are eaten by the Brazilians, Portugese and Dutch, as well as flesh. In the seas, near the cost of Brazil, they meet also sometimes with great lampreys. Before the bridge from the receif to Mauricetown was built, one of this kind of a considerable bigness did lurk near that passage where the boats used to pass over from one side to the other and snatched all that fell in his way (both men and dogs that swam sometimes after the boat) into the water, but at a certain time, by the sudden falling of the tide,

being got a-ground with the foremost part of the body, he was with much ado brought a-shore.

SMALL-POX.

There has been a great mortality of the negroes and Brazilians by a certain infectious distemper, incident to the natives, called Bexigos, resembling our small pox in Europe. Most of these negroes were bought at the rate of 300 pieces of eight, and consequently their loss drew after it the ruin of the planters, who also complained much of vermin, and several inundations that had done considerable damage to the sugar fields. This confusion in traffic introduced no small broils among the inhabitants themselves, who in case of non-payment threw one another in prison without mercy, and endeavored to prevent one another by clandestine means to get in their debts before the rest, offering considerable abatements and rewards to such as would underhand, surrender or transport their effects; and those divisions were not a little fermented by some ill-minded persons, to the prejudice of the government; many of those, who either by unwariness or other mismanagement, lost their debts, laying the fault thereof at the door of the regency and of the courts of justice, vainly imagining that what they had lost by their own neglect or want of care should be made good by the public purse, especially if it happened so that the same persons were indebted to the company, as well as private persons, there arise great contests about the preference.

THE ITATA.

Chili was lately known to the people of the United States because of the pursuit of the Itata and the possible international questions which might thence arise, while

more recently a political war on paper has caused her resources to be investigated, but for some reason, the daily papers have thus far failed to correct popular ignorance in regard to the characteristics of modern Chili. For example, the Esmeralda, whose name has become familiar, was built at a cost of a million and a half dollars and is said to be one of the most complete men-of-war in the world.

THE CHILIAN OF TO-DAY.

The Chilian of to-day is a conscious rival of the citizen of the United States, and his "progress" is such as to entitle him to a larger respect than our self-complacency might imagine. He is said to be "audacious, arrogant, ready to resent affronts, fierce in disposition, dreaming ever of conquest, cold-blooded, cruel as a cannibal, but quick of perception and aggressive;" in short, his temperament seems to be in entire harmony with the volcanic character of the territory which he inhabits. Chili has deprived Bolivia of its vast nitrate deposits, found between latitudes 23° and 25°, and of the deposit of guano which yielded steadily an income of thirty millions a year, while the immensity of its internal resources are illustrated by the fabulous fortunes of Dina Isadora Consino.

DONA ISADORA CONSINO.

This excellent woman of business owns mines of every description (drawing from her coal mines alone a revenue of nine hundred and sixty thousand dollars a year), railroads, plantations, and every other conceivable investment, while her having in the matter of jewels, makes the popular story of The Diamond Nuptials seem petty and common-

place, and her many mansions dwarf the extravagance of a Vanderbilt, a Villard, or Potter Palmer.

DISREGARD OF SEX.

Either the Chilians have advanced so far as to disregard sex as a social factor, or else female service is more attractive or sensibly cheaper, for in that land of a possible matriarchate, women are to be found acting as street-car cashiers, who replace the conductors used in the United States, and the streets are cleaned by a broom brigade.

Chili is predominantly Roman Catholic, but it is illustrative of the fierce independence of the people that they utterly deny the authority of the Pope. So, too, the army is said to consist of guerrilla plunderers—a soldiery which will rival that of any nation in its bravery, but insisting upon fighting after the manner of the Revolutionary troops, and which endeavors to disable the enemy by pillage. The Spanish relics, which were formerly the pride of the Peruvian museum, are now to be found at Santiago, and will undoubtedly be exhibited at Chicago.

Chili has been a singularly favored country, alike under the civilization of Inca, of Spaniard, and under that of the nineteenth century. Her mountains include Aconcagua with its elevation of 23,200 feet; the scenery is strikingly picturesque; and the passes over the mountains are quite as remarkable as the famous Simplon Pass. Silver, copper, quick-silver, arsenic, lead, cobalt, bismuth, iron, and antimony abound. Bituminous coals, quartz, phosphorous, zinc, manganese, sulphur, tin, lime, alum, salt and nitric still further add to Chili's natural resources. Chili's exports consist principally of metals, wheat, hemp, hides, and wool.

Chili became independent in 1817, and has since made rapid strides in her progress towards occupying in South America a position similar to that of the United States in North America.

Chili's appropriation for The World's Columbian Exposition is \$100,000.

Chili's imports during 1890 amounted to \$2,622,625, and her exports to \$2,972,794.

From a recent issue of *The Railway Age*, we cite an account of South American railway enterprise as it is at present, the article having been written by William Eleroy Curtis:

THE INTER-CONTINENTAL RAILWAY.

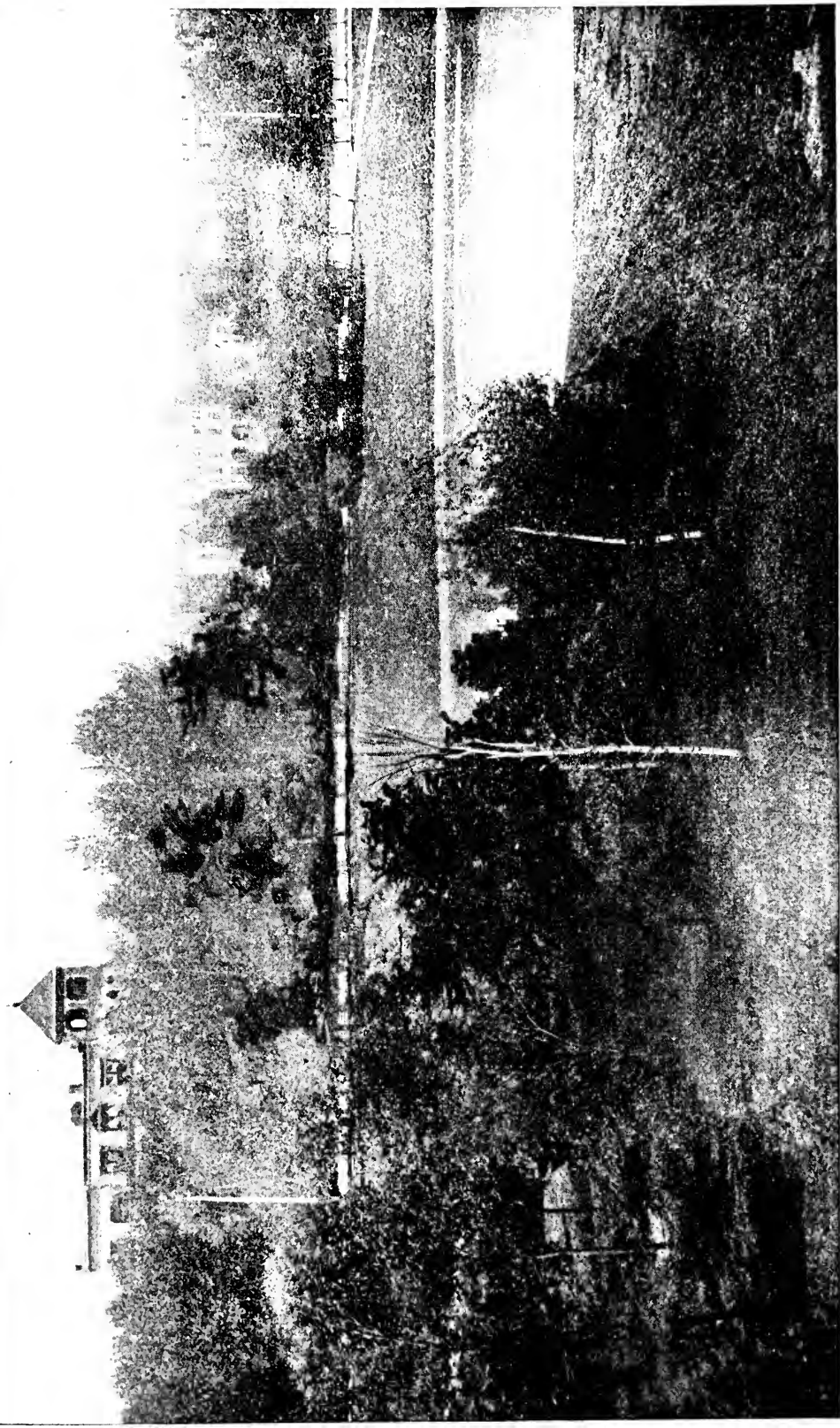
DESCRIPTION OF THE GREAT HIGHWAY BY WHICH NORTH,
CENTRAL AND SOUTH AMERICA ARE TO
BE CONNECTED.

PROPOSED ROUTE AND DISTANCES—EXISTING LINES AND THE
LINKS YET TO BE BUILT—WONDERFUL RESOURCES OF THE
COUNTRIES—THE RAILWAYS OF THE DIFFERENT SOUTH
AMERICAN STATES.

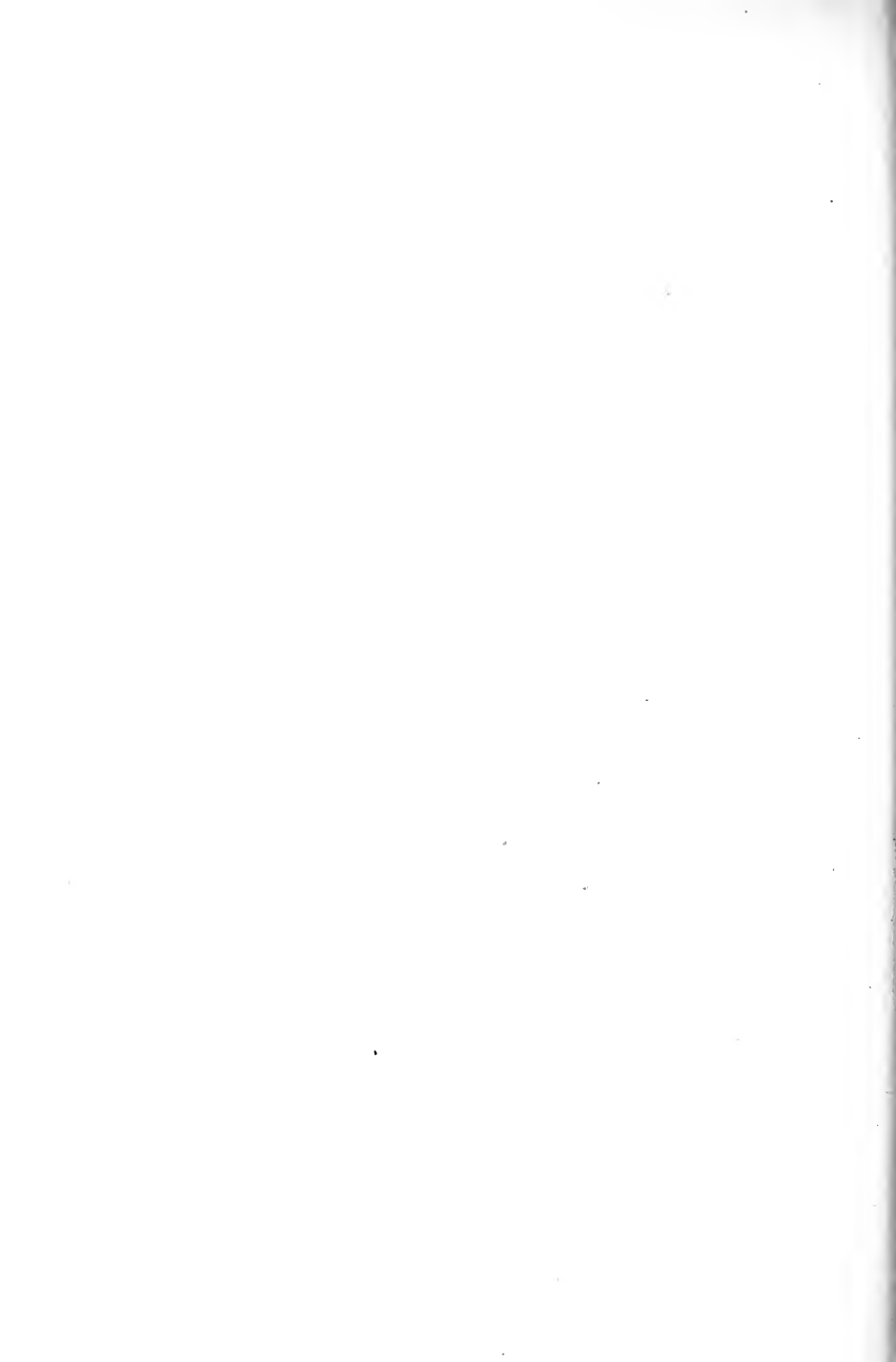
BY WILLIAM ELEROY CURTIS, DIRECTOR OF THE BUREAU OF AMERICAN
REPUBLICS.

No portion of the comprehensive work of the recent International American Conference has awakened more interest in the other republics and in the world at large than the project for an inter-continental railway to connect the transportation systems of North America with those of the southern continent. It is a scheme of enormous magnitude, but not so formidable in this age as was the construction of the Erie, or the Chesapeake & Ohio canals, or the Pacific railways of the United States at the time they were undertaken. The engineering difficulties are not as great as those which were overcome by the Denver & Rio Grande company in Colorado, and arguments can be advanced in support of the enterprise more forcible than those used by Thomas H. Benton in the United States Senate in behalf of the trans-continental project of 1856.

The republic of Mexico is pushing its railways southward with great energy, and the Argentine Republic has been rapidly extending its lines northward until they have nearly reached the Bolivian boundary. Outside of these



SCENE IN LINCOLN PARK.



two countries railway construction has been local and intended only to furnish the productive communities of the interior access to the sea. Chili has a comprehensive system connecting the chief cities with the mines and the coast and is now piercing a tunnel through the Andes to connect with the Trans-Andine road of the Argentine Republic and furnish direct communication between the two oceans. Along the west coast of South America, from the gulf of Guayaquil to the limits of the populated section of Chili, is a series of parallel lines, constructed within the last quarter of a century, extending from the several ports to the mining or agricultural settlements, and in Central America are a number of short roads now in operation that may be utilized as a part of the great system proposed.

During the last three or four years tracks have been laid one-third of the distance between Buenos Ayres and Bogota, and through the most difficult and least attractive portion of the continent—the Gran Chaco of the Argentine republic. The northern terminus of the Argentine system is at Jujuy (pronounced Wewee), a distance of 993 miles from the capital. The distance from that point to La Paz, the capital of Bolivia, is 500 miles. From La Paz to Santa Rosa, Bolivia, a line has been constructed 220 miles in length; from Santa Rosa to Cuzco, Peru, the ancient capital of the Incas, the distance is 190 miles; from Cuzco to Santa Rosa, Ecuador, along the famous highway of the Incas, the distance is 880 miles, and from there to Bogota it is 590 miles. It is therefore a distance of 3,373 miles from Buenos Ayres to Bogota, of which 1,213 is already constructed, leaving a gap of 2,160 miles to be filled:

This line would pass through the great basin of the

Andes, a land of fabulous mineral wealth and the source of the great riches of the Incas. Bolivia is undoubtedly the richest in its mineral resources of any of the South American countries, and has, probably, larger deposits of gold, silver, platinum and other precious metals than any section on the globe; but with the present transportation facilities it is deprived of developing influences, and the mines cannot be profitably worked without modern machinery. This machinery can never enter the country from the Pacific coast. Nothing can reach the mines or be brought away that may not be carried on the back of a mule or a llama. The mountains forbid it. But on the Atlantic side there is navigable water up the Parana river for a distance of 2,700 miles; deep enough for all the ocean ships that enter the sea at Buenos Ayres. From the head of navigation it is only 700 miles to the farthest mining district in Bolivia, and about the same distance to the diamond fields of Brazil. The climate is a perpetual June; the soil is wonderfully productive, the ranges are capable of sustaining millions upon millions of cattle and sheep, the forests are full of the rarest woods and their botanical resources are inexhaustive. The sources of the Parana, the several branches of the Amazon, and the Orinoco, three of the greatest rivers in the world, are not far distant and furnish almost uninterrupted navigation. Already a French syndicate is surveying a railroad route from Bogota to the sources of the Orinoco.

Every possible encouragement will be given for the construction of the inter-continental road by the States through which it will pass, not only in the form of concessions of mineral, agriculture and timber lands, but by a guarantee of from five to seven per cent. per annum upon the amount invested in construction.

HINTON ROWAN HELPER.

Before the fact slips from the elusive memories of men and nations, let it be recorded that Hinton Rowan Helper first publicly suggested and advocated an inter-continental railway, and for the last ten or twelve years has not lost an opportunity to create public sentiment on three continents in favor of the scheme. If Mr. Helper had lived 2,000 years ago he would either have been the high priest of some popular oracle or confined to a dungeon, as Galileo was, for striding in advance of his generation. No published volume ever created profounder sensation than his "Impending Crisis," and a candidate for speaker of the house of representatives failed to secure that honor simply because he recognized in its prophetic lines some sentiments worthy of indorsement. His second literary venture, entitled "The Three Americas' Railway," had no such reception. Its author was regarded by the few who read the volume as a harmless crank with a harmless hobby.

On the 18th of July, 1879, Mr. Helper, then residing in St. Louis, placed the sum of \$5,000 in the hands of Cyrus B. Burnham, president of the Bank of Commerce in that city, to be awarded as prizes for the best essays upon the subject of "The earliest possible construction of a longitudinal midland double-track steel railway from a point high north in North America, running more or less southwardly through Mexico and Central America, to a point far south in South America." "The Universal Republic of Letters" was invited to compete. The judges selected were Thomas Allen, president of the Iron Mountain Railway; Carlos S. Greely, receiver of the Kansas Pacific Railway, and Dr. William T. Harris, then superintendent

of public instruction at St. Louis and now United States commissioner of education. Dr. Harris afterwards resigned and Horace H. Morgan, principal of the St. Louis high school, was appointed in his stead.

There were 49 essays submitted by 47 contestants; 10 from Missouri, 7 from New York, 4 from Illinois, 4 from Canada, 3 from Pennsylvania, 3 from Ohio, 2 each from Massachusetts, North Carolina, Indiana, Kansas, Nebraska and the District of Columbia, and 1 each from New Hampshire, Virginia, Washington Territory and Australia. In January, 1881, the committee made their awards, and the prize essays, with some papers from the pen of Mr. Helper, were published in a volume which attracted but little attention and ultimately found its way to the top shelves of libraries and second-hand book shops. The seed thus planted fell mostly upon stony ground, but a few thoughtful, far-sighted people pondered upon the ideas suggested by Mr. Helper and wrote him hopeful and encouraging letters.

When the South America commissioners were appointed in 1884, Mr. Helper always alert for opportunities to promote his project, asked the Department of State to include his railway scheme among the topics they were to discuss with the governments they were to visit. This was done, and the suggestion was everywhere received with the greatest favor. Therefore, when the International American Conference—one of the results of the work of that commission—was organized, a committee was appointed to take the subject into consideration. This committee consisted of one delegate from each of the Central and South American republics and two from the United States; ex-senator Henry G. Davis, of West Virginia, and Mr. Andrew Carnegie, of Pennsylvania.

INTERNATIONAL CONFERENCE.

The report, which was presented to the conference on the 20th of February and unanimously adopted a few days later, declares: (1) that a railroad connecting the American republics will greatly contribute to the development of their political relations and material resources; (2) that the work of such magnitude deserves the encouragement and co-operation of all the republics; (3) that to insure the perpetual freedom of traffic the railroad should be declared forever neutral, and that its uninterrupted operation shall be guaranteed by them all; (4) that it should be forever exempt from taxation, and that all materials and supplies for its construction, maintenance and repair should be admitted free of duty.

The report then recommends the appointment of a board of commissioners from each of the American nations to superintend a survey to ascertain the best routes, the probable cost of construction and the amount of existing and prospective traffic, the expense to be divided among the several governments interested in proportion to their population, and the headquarters of the commission to be in the city of Washington.

The Congress of the United States accepted the recommendations of the International Conference without hesitation, appropriating \$65,000 as the share of this government for the first year's work, and authorizing the appointment of three commissioners to represent this country on the international board; Alexander J. Cassatt, of Pennsylvania, George M. Pullman, of Illinois, and Henry G. Davis, of West Virginia, were afterward named as such commissioners.

All of the other American republics accepted the rec-

ommendations with equal readiness and enthusiasm and most of them have appointed commissioners.

The commissioners met in Washington on the 5th of December, were welcomed by a felicitous speech from Mr. Blaine and elected Mr. Cassatt as their president. A committee on organization was appointed, and then an adjournment was taken until the commissioners of Brazil and the Argentine Republic, who for some reason were delayed, could arrive. At this writing they are on their way and are expected in Washington at the beginning of the new year, when the organization will be perfected and the actual work begun. It is understood that Mr. Hector de Castro, of New York, who has for many years been vice-president and general manager of the Commercial Cable Company, and before assuming that position had considerable railway experience in Texas, will be made secretary. A most important appointment, however, will be that of chief engineer, and the committee on organization is now considering the claims of several gentlemen who have been recommended. The committee on foreign affairs of the House of Representatives has provided for an additional appropriation of \$65,000 as the share of the United States for the next fiscal year, and their recommendation will doubtless be adopted by Congress. After the appointment of a chief engineer, it is probable that the commission will divide the route to be surveyed into sections and place several parties in the field, each with a corps of topographers, geographers, geologists, mineralogists, etc., in order to make a thorough investigation of the resources of the regions to be traversed, as well as to designate the route.

PROSPECTIVE BENEFITS.

Whoever builds this road will hold the key to the treasures stored in the heart of the southern continent, and their values has furnished food for three centuries of fable. A section of country as large as that which spreads between the Mississippi River and the Pacific Ocean lies there unoccupied and almost unexplored. On its borders are rich agricultural lands, fine ranges, the greatest timber resources in the world and the silver and gold mines of Bolivia, Peru, and Ecuador. What exists within this unknown country is of course only a subject of speculation, but the further a man has gone the greater has been his wonder. The tales of the explorers who have attempted to penetrate it sound like the recital of the old romances of Golconda and El Dorado, but the swamps and the mountains, the rivers that cannot be forded, the jungles which forbid search, the absence of food and the difficulty of transporting supplies, and the other obstacles which now prevent exploration will eventually be overcome and the secret which has tantalized the world for more than three centuries will be disclosed by ambitious scientists.

The cost of this road is of course a matter of speculation, but no more money will be needed than has already been wasted upon the Panama canal. Three hundred millions dollars, which, I believe, is the sum already expended upon that enterprise, will, at the rate of \$50,000 a mile, construct 6,000 miles of road, and the distance to be covered is much less than that. Even at a cost of \$75,000 a mile, \$300,000,000 will build it.

It is not expected that private capital alone will complete this great undertaking, although the assurance that

the 17 American nations will join in protecting the railway from disturbances and from confiscation, will give private capital a guarantee that no South American enterprise has hitherto enjoyed. The commission will, however, before completing its duties, which will extend over a term of years, make recommendations on this point which it is too early to anticipate.

THE RAILWAYS OF THE ARGENTINE REPUBLIC.

It is needless to refer to the recent panic in the Argentine Republic which has been widely discussed in the newspapers and which was caused by excessive enterprise and official corruption; but it is interesting to know that the trans-continental line to Chili, which has for two years been completed and in operation to the great tunnel through the Andes, will be finished so as to permit of through trains from ocean to ocean before the end of 1891. This road is one of the most daring and expensive engineering undertakings of the age. Eight tunnels in all are to be driven. Their total length is 15,375 meters, or roughly speaking, nine and two-thirds American miles. The largest of these is the tunnel of "la Cumbre"—the summit—where the frontiers of the two nations meet. Between two-thirds and three-fourths of the tunneling is in Chilean territory and only one-third or one-fourth in Argentine. The Argentines, however, have made the earlier beginning and have about a half of their task completed, while the Chilians have not done a quarter; but on the Chilean side the work is now proceeding much more rapidly. The very best of tools and engines are required, and in remote fastnesses, where until lately the feet of white men hardly ever trod, electrical machines are humming, furnishing motive power for the work.

THE RAILWAYS OF MEXICO.

The readers of *The Railway Age* are familiar with the railway system of Mexico, and it is needless to speak in detail of that country, which already possesses nearly 7,000 miles of track, and within the next year or two will have 10,000 miles of rail laid down. There are recent advices from the capital of Mexico to the effect that the government has wisely decided not to grant any further financial assistance to railway enterprises in the shape of guaranteed interest or mileage subsidies, and will declare forfeited all existing concessions which are not complied with within the stipulated time. Grants of land will, however, it is said, be made to aid in extending existing roads and branches from them to the interior settlements. President Diaz believes that the railway system of Mexico will be so far advanced when existing enterprises are completed that its agricultural and mineral interests will find sufficient lines of transportation to market, and private enterprise will be found to supply any demand for additional railway facilities. This judicious determination was prompted, it is said, by the recent and well understood crisis in the Argentine Republic.

THE RAILWAYS OF CENTRAL AMERICA.

Railway enterprises in Central America are at a standstill at present, with the exception of Costa Rica, where the road from Limon, the port on the Atlantic, to the capital, San Jose, which has been under construction for the last ten years, has been completed. The first through train from Port Limon to San Jose was to have been started with great ceremony on the 15th of December and regular traffic opened during the following week. The dream of

the Costa Ricans to possess a railroad of their own on the shortest lines possible by which to reach the great world appears now to be fairly realized. The difficulties in the way of this achievement, both financial and physical, have been great. Swamps and quagmires, treacherous and turbulent rivers, huge and rugged mountains have interposed an almost insurmountable barrier to the engineer and contractor. Difficult and tedious as were the efforts to raise means for the work, they were eclipsed by the natural obstacles which had to be overcome before success crowned the undertaking. And to Mr. Minor C. Keith is Costa Rica indebted for the triumph its people may now celebrate, as he has been financier and contractor, with unsurpassed energy and steadfast faith in an undertaking which men with less intelligence and stamina would never have essayed. It is expected that in May next the road will be turned over to the English syndicate which has furnished the funds for the construction of the Reventazon section and for the remetaling and stocking of the other and older sections of the line.

THE RAILWAYS OF VENEZUELA.

The railway development of Venezuela is slow but promising. There are several concessions of importance pending in the money-centers of Europe, but the uncertainty as to whether Guzman-Blanco, the former dictator, would return and endeavor to recover the government by force has made capital timid about investment there. It seems hardly possible that Guzman will recover his lost prosperity and power, and without him the country will be a great deal better off.

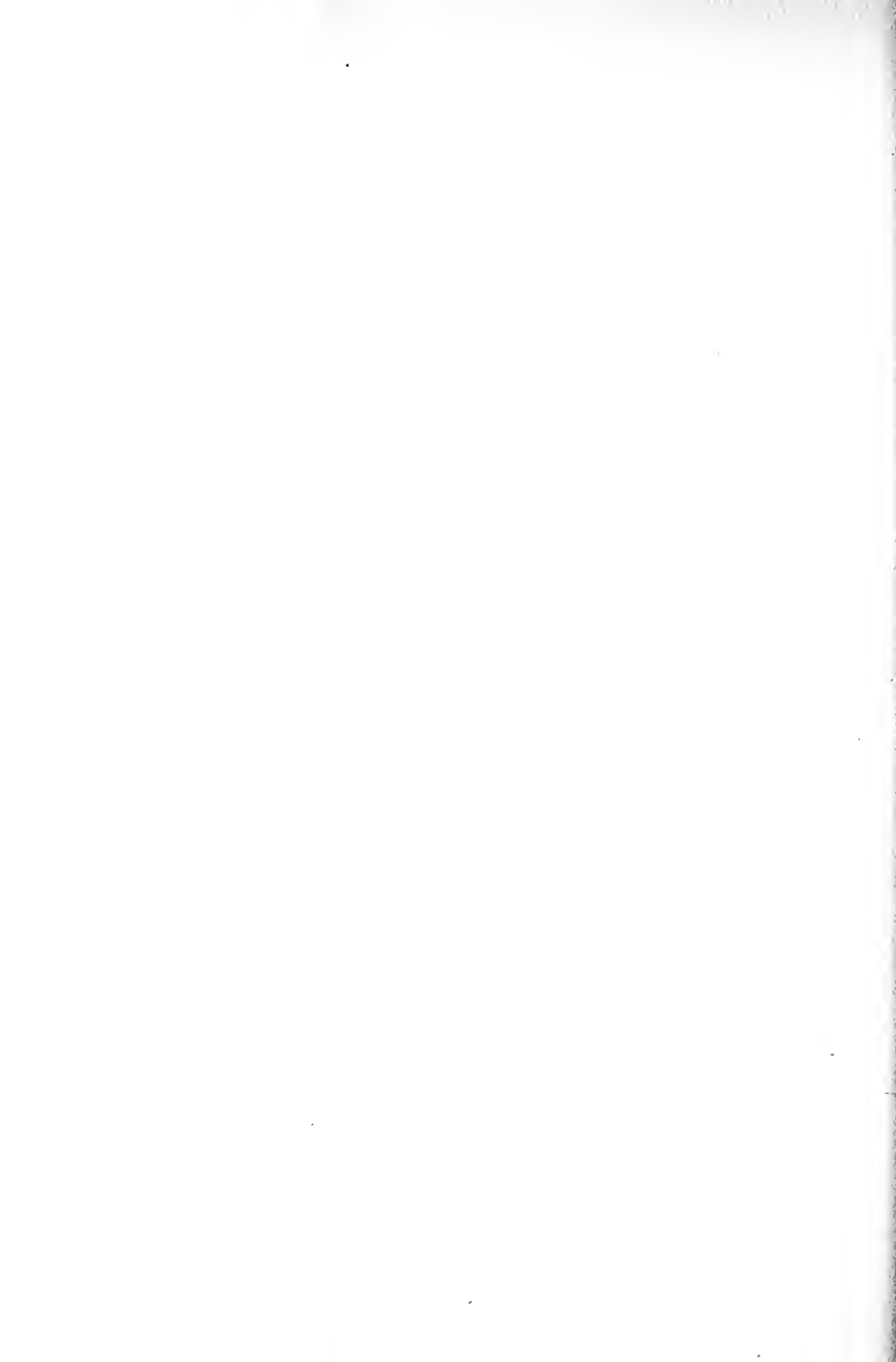
By far the most liberal and valuable railway concession thus far granted by the Bolivian government is that to



69

U. S. MAN OF WAR.

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THE WINTERS ART LITHO CO., CHICAGO.



Mr. W. H. Christy, of New York, which has just been practically completed. This concession is for a standard gauge road from Oruro north to the Peruvian frontier at Huaichu, a distance of nearly 300 miles.

The completion of this railway and the extension of the Antofogasta & Huanchaca road from Huanchaca to Oruro will place another link of 500 miles in the natural route of the proposed intercontinental railway, with a branch of over 350 miles extending from Huanchaca to Antofogasta on the coast of Chili. From Huanchaca this line of railway can be easily pushed on south to meet the Argentine system that is rapidly being extended to the Bolivian frontier. But a comparatively short and easily constructed link will be required to connect these lines with the Southern railway system of Peru at Juliaca, where it will have its northern extension, via the road now in operation from Juliaca to Santa Rosa, and which is to be extended as far north as Santa Anna via Cuzco under the recently concluded contract between the Peruvian bondholders and the government of Peru, known as "the Grace contract." From Juliaca this system will have connection again with the coast at Mollendo, Peru, via the present Mollendo, Arequipa & Puno Railway, a distance of 270 miles. It will thus be seen that a direct and continuous line of railway north and south through the Argentine Republic, Bolivia and Peru is practically assured, and an immense stretch of territory opened to be covered by the proposed international railway, with diverging lines to the Pacific coast.

The enormous resources of Bolivia make it a most attractive country for the investment of capital, and a French syndicate has recently submitted to the government a plan for a system of railroad to the southeast

which will give that country access by three different routes to the Atlantic. This syndicate is represented by Dr. Antonia Quijairo, and his plan has been accepted by the government, although the terms are not yet distinctly agreed upon. The Quijairo plan proposes three lines of road—one from La Paz to the Argentine frontier, to connect with the railway system of the latter republic; another from Sucre to the mines of Potosi, passing through what is supposed to be the richest mineral belt in the world. The third line passes across the Bolivian frontier eastward to the navigable waters of the Paraguay river, which will give commerce over that line unrestricted water transportation to the sea.

Perhaps the reader will have a clearer idea of Chili as it is to-day if we add a popular account which an able and well informed writer has recently contributed to the *St. Louis Republic*:

CHILI OF TO-DAY.

The most warlike nation of South America shows small on a map, but has a very extensive territory, with uncommon resources. Her soldiers are active, well-drilled and valiant, without a fear of death. Since the possibilities of a war with Chili have become the chief topic in this country it has been remarked frequently that the idea of so large a nation fighting so small a nation is a little ridiculous, and that such a war could bring no glory to the United States, says the *New York Sun*. Even those who talk loudest in favor of teaching the Chilians a lesson in manners, as the phrase goes,

who would send an army at once, if they had their way, pause when the disparity between the two nations is spoken of, and admit that Chili is too small a country to notice with dignity, and her people scarcely worth considering. Indeed, the idea is fixed deeply in the American mind that the most southerly of Republics is not only the smallest Republic, but one of the smallest nations, and that her people are slender weaklings, who make loud boasts, but are incapable of fighting and at heart cowards. The prevalent idea of the valor of South Americans generally is far from flattering, and most people in this country consider the Chilians less valorous than the rest. The fact is that there is no country or no people on the face of the earth about which Americans know less than about Chili and Chilians. This is excusable, perhaps, for the reason that there is less literature about that country than any other. Situated where it is, in the extreme south and west of South America, out of the lines of travel and unapproachable except by sea, it has been skipped over by travelers. There are several voluminous histories in the Spanish language and a brief dozen or two dull books of travellers' notes which have attracted no attention. There has been more written about the savage tribes of Central Africa than about the powerful and enlightened Republic of Chili. Moreover, very little of Chili's tremendous trade has come to America. Great Britain takes care of that. In England they know what resources the country has, and what a power she is. Here we know Chili as a long, yellow mark on the map. We think of her as a barren Republic, clinging tooth and nail to the Andes Mountains to save herself from tumbling into the Pacific Ocean. We think of her people as partly civilized half-breeds, swarthy of face and

slender of limb, who live in straw huts and work in gold mines owned by Europeans. Perhaps the very contempt with which we regard Chili and Chilian affairs contributes to our rage at reported insults. Chili! Faugh! Let us wipe her off the face of the earth!

Perhaps it will be news to most Americans that Chili is in some respects the greatest nation in South America. That she is the most powerful will stand undisputed. That she is universally feared by her neighbors is a fact. That she is hated follows naturally. Chili is strong, aggressive and warlike. She is to South America in many ways what Russia is to Europe. No southern nation will risk a quarrel with her, and her neighbors eye her askance, doubting her intentions. Perhaps it may be news to most Americans that Chili is a large country. She is small on the map, because her sisters are enormously larger, but her territory is extensive. She is larger than any country in Europe except Russia. She has 2,500 miles of the sea-coast. If she were plucked loose from her Andes and laid down over our Atlantic coast, her most northern province would cover Maine, and her rock-bound southern extremity would blot out of existence the Peninsula of Florida. With the length, Chili has a breadth of from 50 to 200 miles. Perhaps it will further surprise most Americans to know that Chili is probably the most advanced nation on her continent. Her railroad, telegraph and telephone systems are of the best. Her method of government is superior to any. Her schools and universities are in the van of education. In methods of farming she equals the United States. In manufactures she far distances every South American country, and she is a model for any new nation in the world. Her mining operations are modern and extensive.

Her commerce is far extending and increasing. Chili is not a tropical country, it must be remembered. She occupies the same zone that we occupy. The only South American rival which she has in matter of civilization and progress is that amazing Republic of Argentine, just across the Andes, a republic which is surpassing in growth the best efforts of our own wonderful country.

And now comes another surprise. Few Americans will be prepared to believe that the Chilians are a pure white race, strong of body, sturdy of will, bright of wit, a people of great courage, determination and patriotism. They are unlike any other South American people in these respects, and that is why they are feared. They are smaller in stature than Americans, but larger and sturdier than their neighbors. The masses, those who make up the bulk of the population and the rank and file of the army, are of mixed race, largely Indian. They are people of great strength, endurance and ferocity. The common soldiers, of the blood of the warlike Araucanian aborigines, make Chili terrible in war. They have no fear of death and do not know when they are defeated. In the war with Peru the enormous proportion of dead to wounded left on the field of battle has gone into history as a memorial to the ferocity of these dark-skinned warriors.

THE SIZE OF CHILI.

Imagine the entire eastern coast of the United States, with from 100 to 200 miles of breadth, cut off from the rest of the country. Imagine the Rocky Mountains, largely increased in height and capped with eternal snows, set close up against the western edge of that strip of land, their sides pushing down abruptly and joining the level

by slopes not so easily traversed. Now, imagine the Alleghenies pulled from their bases and planted along the western edge of the coast, so close to the sea that there is only room for some narrow plains and a few towns here and there between the surf and their abrupt slopes. Suppose the long, narrow strip of country between the parallel mountain chains a fertile plateau blooming with vegetable wealth, dotted with cities and villages and crossed by innumerable torrents carrying the drippings of the snow-capped mountains to the sea. That is Chili reversed, of course, for Chili's coast is bathed by the Pacific, and the sun rises over the white summits of her volcanoes.

Following out the comparison a little further we find that Chili's territory would cover the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, a third of New York, all of New Jersey, half of Pennsylvania, most of Maryland, all of Delaware, nearly half of Virginia and North Carolina, three-quarters of South Carolina, half of Georgia, a corner of Alabama and all of Florida.

Chili, or Chile, as she spells her name, runs from the fifteenth parallel of south latitude well below the fifty-sixth. The northern provinces grow hot under a tropical sun and bring forth the fruits of Southern California in profusion and perfection. The wild and rocky territory which she pushes southward to within twelve degrees of the Antarctic zone is cold and cheerless, given to ice in spring and fall, and little productive of vegetation. Between the two limits the fertile valley brings forth the products of every zone by turn. It brings forth its produce freely, too, under the spur of perfect irrigation and enlightened methods of agriculture, and the country

eats its fill and sends a large surplus of grains and other produce to its less energetic neighbors.

The same general land configuration extends from the volcanic peaks of the extreme North almost to the barren island of Terra del Fuego, where land ends. The august Andes always push their snowy summits into the clouds to the east of this central valley, where the nation lives, and the lesser heights of the Cordilleras de la Costa always hide the sea on the west. Chili is more blessed in scenery than Switzerland. There is no spot in all her great territory which huge mountains do not overlook. They are among the highest in the world. Aconcagua rises 22,427 feet into the air. The two dozen other volcanoes, not so ambitious, are of enormous heights also. Below the summits the rugged and notched ridges of the mountains glisten whitely till they subside into pale blue below the snow line.

The Cordilleras de la Costa are cut by many passes, down which rush mountain torrents, and through which pass well-constructed railways. The slopes of the Cordilleras are short, ending abruptly in the sea. The central plateau is much higher, so that the eastern mountain slopes are softer. At Santiago the central table-land is 1,800 feet high.

The Andes are the eastern boundary of Chili in more senses than one. There is an imaginary line drawn along the summits which divides the country from Argentina. Few people cross the Andes. The passage requires from four to six days. There are a few so-called passes, but they cannot be traveled except on muleback. The passes are simply slight indentations in the mountains. The best known is Dona Ana. You have to mount 14,770 feet above the level to pass through it. New Yorkers look

upon Mount Marcy, in the Adirondacks, as a very high mountain, and boast of having climbed it. It is 5,200 feet in height. The lowest of the passes over the Andes is Planchon. It has 11,455 feet of altitude. Chilian enterprise has projected a railroad over the Andes, which is now under construction. With or without the railroad the mountains are a natural boundary, and Chili and Argentina will never quarrel over disputed territory.

But travelers tell us that the beauty of the country passes all description; that the country from end to end presents a magnificent and bewildering spectacle, a glorious panorama of brightness and shadow, of paradise and desert. Travelers also tell us that the country is wonderfully inspiring. Its climate is everything one wants. If you want warmth, go north to the land of figs and oranges. If you want cold, move south to the vast pine forests. If you are not particular, settle anywhere between these extremes. In Santiago, the capital, the temperature is never higher than 70 degrees, and never lower than 52 degrees. It never rains there, except during the four winter months, but dews always keep the atmosphere moist and pleasant. There is no country more healthful than Chili, the travelers say.

Chili has enormous natural wealth. The wealth is of various sources, which will be understood best by dividing the country into sections or belts which represent different kinds of produce. Beginning in the north, the first is the mineral belt, from 18 to 32 degrees, comprising the provinces of Tacna, Tarapaca, Antofagasta, Atacama, Coquimbo and Aconcagua. The next is the agricultural belt, from 32 degrees to 41 degrees 30 minutes, comprising the provinces of Valparaiso, Santiago, O'Higgins, Colchagua, Curico, Talca, Linares, Maule,

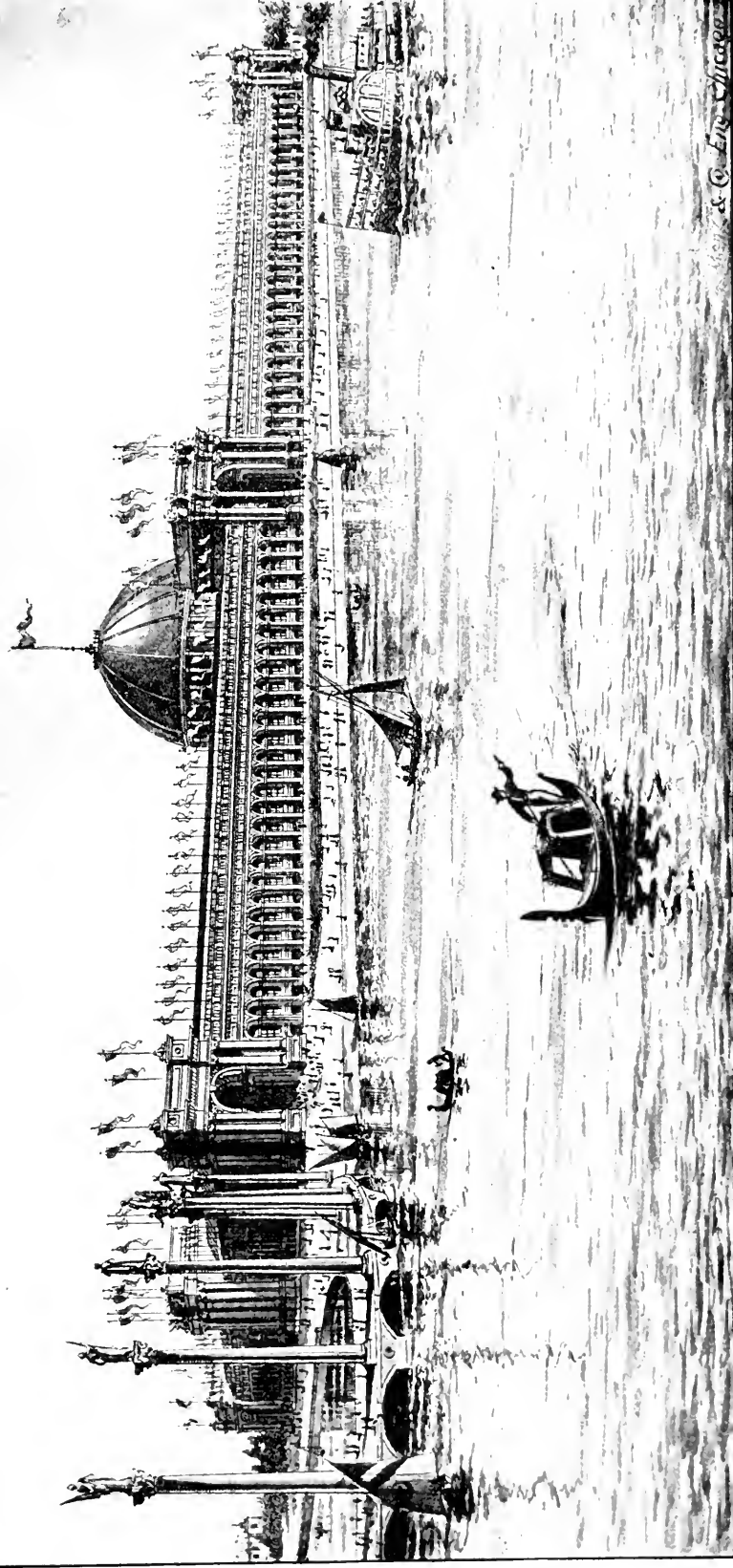
Nable, Concepcion, Bio-Bio, Auro, Malleco, Cautin, Valdivia and Llassquihue. The third is the timber and fisheries belt, and includes all the southern end of Chili, with primitive forests, islands and lakes. There is enormous natural wealth in each of these zones. The most northern or mineral zone, however, is Chili's stronghold of wealth. The treasures she digs out of the earth make her a great nation, place her name in the third class—alongside of that of France—in the table in which the nations of the earth are enumerated comparatively, according to their national debts and the nature and disposition of their resources.

In the mineral belt, gold, silver, copper, lead, antimony, cobalt, zinc, nickel, bismuth, iron, molybdenum and nitrate are found in great quantities, and the mining operations are extensive. The Germans and English have flocked there with capital to work the mines. Chili-ans also engage in the work as principals, but not to the same extent as foreigners. The country profits enormously by her mines outside of the employment it gives her laboring classes, through the fees she exacts of the mine-owners for privileges and the export tax which she places upon the output. The silver mines of Chili are among the richest and most extensive in the world. The stories told by travelers of the percentage of pure metal found in the ores are considered preposterous sometimes, but there is evidence to show that the ores are wonderfully rich, surpassed perhaps only by a few ancient and celebrated mines in Peru. The great mineral wealth of Chili, however, come from her nitrate of soda deposits, and therein lies a story.

Before the war of 1873, between Chilli on one hand and Peru and Bolivia on the other, the northern boundaries of

Chili were fixed indefinitely south of the Bolivian desert of Atacama. North of Atacama was the desert of Tarapaca, which belonged to Peru. Chili never questioned the rights of those countries to her arid regions till it was ascertained that they were stored with wealth. The silver mines of Guantaguya and Santa Rosa, near Iquique in Tarapaca, had been known before, but it was believed that the deserts were of no value. But when it was discovered that in Tarapaca and Atacama there were inexhaustible beds of nitrate and borax; that in Atacama were some of the richest silver mines in the world, and that guano deposits had accumulated on the rocky promontories of the coast, Chili disputed the boundary lines. A pretence for war was found upon the flimsiest of evidence. Bolivia and Peru united in defence. But together they were no match for Chili, and both provinces have since paid their tribute into her coffers, and form now her chief source of income.

The yearly output of nitrate of soda is enormous, and hundreds of vessels are engaged in the traffic of carrying it from the deserts of Chili over the world. British capital chiefly is employed in the great industry. The nitrate is found from one to ten feet below the soil, mixed with extraneous matter. In that form it is called caliche. The beds of caliche are four to six or eight feet in thickness, and extend over vast areas of territory. The Tarapaca Desert is especially rich in it. The caliche is obtained by blasting, the powder being packed in deep holes or tiros, extending through the upper soil and the caliche itself. It is then loaded on cars and taken to the shore by train, where it passes through purifying processes of dissolution and recrystallization. The nitrate is then ready for the market and is shipped in bags.



MANUFACTURE AND LIBERAL ARTS BUILDING.

W. & C. L. P. 1850



The deserts which hide the nitrate beds are desolate in the extreme. It is probable that rain has not fallen on them for many years. Animals cannot exist there. Rivers miles away are deflected from their courses to supply drinking water for the laborers, and all supplies are brought by railroad. The nitrate beds are supposed to be the dried bottoms of salt lakes of prehistoric times. Many thousands of Chilians are employed there. Thus Chili derives her largest income from provinces stolen from weaker neighbors.

The other minerals found in Chili pay largely also. Her deserts and mountains are full of wealth, and are making fortunes for those who work them. Her guano beds are large and profitable, although her nitrate has of late curtailed the demand for guano, being itself a cheap fertilizer. It is believed that Chili's mountains are full of undiscovered fortunes. Coal of an excellent quality and in unlimited quantities has been discovered south of the mineral belt, and is being mined extensively and very profitably. The agricultural belt south of the mining region is a delightful country, covered with farms and dotted with flourishing towns. It is crossed by railroads in many directions, and is as prosperous and delightful a country as can be found. The greater cities are there.

But in spite of the fertile soil and climate only irrigation has made agriculture possible throughout a large part of Chili. The Andes suck the moisture from the winds and rain is light and infrequent. But the industrious Chilians deflect the rushing rivers from their courses and spread their waters in little ditches over the country. The system, which travelers describe as very similar to that used in our Western States, is carried to a degree approaching perfection. The farmers of a section com-

bine to tap a river and ditch its water to their acres, where it is distributed, the expenses being borne in common. Under that system the whole country blooms like a garden. Oranges, lemons and figs abound toward the north. Then comes the region of flax, corn, grapes, olives and peaches. Further south, where the climate is much like that of Great Britain, wheat, barley, rye, flax and corn are cultivated with immense success in quantities sufficient to supply the nation and export largely. Peru and Bolivia depend to a great extent on Chili for their cereals. Travelers praise that favored part of Chili in words which seem excessive.

The timbers and fisheries belt, comprising an enormous territory, is almost an unexplored wilderness. Its forest wealth is declared to be unsurpassed, except by the British possessions of North America. The trees are of varieties unknown to us, but just as satisfying to the needs of man. Capital is attacking the edges of the forests, and an export business has been begun with Europe. The fisheries are of immense value. They, too, are entirely undeveloped. The Government is trying to direct immigration into that part of the country with the hope of realizing something of its possibilities. But it is slow work; for the country is wild and occupied by the Araucanian Indians, who, if not hostile, are lawless and unpleasant neighbors. The savages are fearless and physically powerful. They are coming under the domination of the Government, to which they have sold their territories little by little.

Such is Chili, a country of large area, enormous natural wealth, wonderful physical beauty, and great possibilities. It is surely deserving of domination by a worthy race.

CHILI AND ITS PEOPLE.

In Chili class distinctions are marked. There are three classes among her inhabitants. The ruling class is purely white, descended from the Spanish conquerors of the land, as Americans are descended from the former English possessors of America. The lower class is a mixed race, combining the blood of the Spaniards and the Araucanians. The mixed people are called peones, in English peons. They constitute the bulk of the population, and do the laborious and menial work. In the third class are the Araucanians pure and simple. There are 50,000 of the savages in the country. They yield a ready obedience to the laws when they leave their wilds for civilization, and they can be impressed into the army if desired. They are fierce, cruel and tireless fighters.

Nearly all travelers who write of Chili fail to distinguish sufficiently between the Chilians of pure Spanish, or, at least white blood, and the mixed class. That is one reason why Americans have such wrong impressions of the people. The Chilians are as white as we are, and nearly as numerous as the peons, whom they treat imperiously. There are naturally many of the lower class whose admixture of Indian blood is very small and who are nearly white. For that, however, the unfortunates must suffer.

The Chilians are a proud race, arrogant, pretentious and fond of display. There is much of their Spanish forefathers about them. They have acquired in the brisk climate an energy not Spanish, but have retained a love of ease and a carelessness or slovenliness with their work which is traceable directly. They have kept their Spanish beauty. They are not stunted in stature to the degree noticeable in the descendants of Spaniards in other South

American countries, probably another result of climate. They are strongly of the Spanish type, however. The men are slender and graceful, although strong of build, and the women are dark, languorous beauties, who know well the coquettishness of the Spanish manta, and to sing love-songs to the twang of a guitar. There is a certain atmosphere of romance and poetry thrown over this interesting country, which is certainly an inheritance. It is not born of the air, which is brisk and inspires action rather than sentiment. The Chilians are far from lazy. They are hearty and active, with an ambition to lead in all things, art and science as well as business, manufactures and war. They are copyists, however. Their civilization, high as it is, is crude and in many ways unformed.

Santiago, the Chilean capital, is a handsome city. It lies in the great plain between the two mountain ranges, the great snow-capped summits of the Andes being visible from every street. It is laid out like a chess-board, as indeed is every Chilean town, however small. There is a grand central plaza, with the cathedral, the governor's palace, and the great public buildings on two sides, and the swell shops of the city on the other two sides. The plaza is the real center of the town. Its life, social and business, seems to spring from it. At night there is music under its trees, and the inhabitants gather and promenade, making a nightly festival. By day the plaza is lined with *baratillos*, or small retail booths, much patronized by the inhabitants. The city is well ordered. The shops are small and not remarkable for the variety or quality of the goods they contain. But Santiago is not a business city. Valparaiso, four hours away by express, is the great seaport and business center of the nation, the New

York of Chili. Santiago is the city of homes and society, the social and governmental head of the nation. There are numerous street-car lines in the city, and blooming half-breed girls act as car conductors. It is a singular custom, seen nowhere else in South America. Many of the half-breeds are handsome, and the women, when young, are plump and rosy. The bright-eyed conductors seldom retain their places long. When one becomes a conductor she might as well order her trousseau and be done with it.

The great street of Santiago is the Alameda, a boulevard with a central garden of trees, adorned with statuary and with roadways on either side. There are many fine residences along the street, as there are also in the interminable streets which run to right and left, always crossing at right angles and occupying great areas of ground.

The Chilian house is something of a fortress. It has indications of the old Spanish house about it, with many original features. It is built around one or more courtyards, and is shut off from the street by heavy doors and sometimes by iron gates besides. A blank wall is all that is presented from the street. The outsider gets no glimpse of the charming homelike scene within, of the orange trees blooming in the court yard, of the curious angles, far projecting roofs, quaint turnings and twistings, carved rafters, nail-studded doors and other comfort-suggesting features of the truly interesting structure. An exceedingly inhospitable building is the Chilian family home. It offers no welcome to the stranger, and little even to the acquaintance, for social lines are drawn much more tightly in Chili than they are here.

The well-to-do and poorer Chilians live in more modest

dwellings of the same general plan. It remains to the peons, the half-breeds, to live in wretched sheds and hovels, jammed together in frightful and filthy dens. But it may be that travelers unwittingly exaggerate the poverty of the peons. Doubtless well-to-do Chilians who visit New York write home thrilling descriptions of Hester street.

Most of the dwelling houses are built of adobe or sun-dried brick for the first story. If there be a second story it is often of cane, the whole plastered with mud and colored and ornamented. But few houses have more than one story, for Chili is a land of earthquakes. Although common and of constant occurrence, earthquakes are not regarded as either dangerous or unpleasant. Many private houses are of large size, covering 400 or 500 feet square of ground, and accomodating three generations of a family, with dining-rooms which will seat sixty at table. Many have architectural pretensions, and are decorated with elaborate mouldings and marble slabs. But stucco is depended upon, and houses are painted every color and shade distinguishable by the human eye. Santiago has a large theatre, which is patronized extensively.

An admirable understanding of the Chilian people can be obtained by visiting the plaza in the evening. The scene has been described by more than one traveler. A military band plays European airs, while the people, young and old, promenade in the winding pathways under the trees. Many of the costumes worn have been imported, and all have been cut after Parisian fashion-plates. The men wear black coats and silk hats, the women and girls dresses of silks and expensive fabrics. There is more or less flirting, perhaps more boldly car-

ried on than with us. The scene is enlivened by the presence of many officers in gay uniform, for Chilians affect the army and are fond of its display. Mixed with the throng of gay and light-hearted whites are the mixed people, the peons, the unfortunates who have Indian blood. The women are dark-skinned, with straight, black hair, and are homely after they pass the age of rosy cheeks. They dress corsely and are vulgar in their manners. Both men and women acknowledge the superiority of the whites. The whites in turn treat them like slaves. A Chilian will not thank a peon for a service.

The military atmosphere is everywhere. The officers are bold, arrogant fellows who know their tactics by heart and are accustomed to command. The Peruvian war showed that they were intrepid and fearless soldiers as well as brainy tacticians. The common soldiers, the peons, are stocky, sturdy, powerful, brutal, fearless. They love fighting, and they have no fear of death. Theirs is a curious religion, inherited from the Araucanians and full of odd superstitions. It teaches them that death in battle is glorious. The religion of the whites, by the way, is Roman Catholic. It is recognized by the state, but all other sects are tolerated, and there are some flourishing Protestant societies.

Large and expensive barracks and military schools are now in course of erection in Santiago, for the Chilians mean to cultivate the art of war. They have also the long-established Escuela Militar, the Academia de Guorra a military club, an Institute of Military Engineers and the like. The Chilians are close students of European armies, tactics and systems. Of other institutions Santiago has her share. She has an extensive public school system, galleries of art, scientific collections and societies,

a national college of a high order, schools of law and medicine, and the like. With its electric lights and telephones and telegraph systems, you would not know Santiago from an American city. Eight newspapers are published daily. Besides large banks, the city has every necessity or luxury attendant on the highest and most complex state of civilization.

Valparaiso, the port and business centre of Chili, on the west slope of the Cordilleras de la Costa, is very different from Santiago. It is essentially an English city. It is large, of no particular beauty, and with something of a cosmopolitan air. It has clubs and a large English population. Germans, too, are very numerous. A great deal of wealth is centred in the town and invested in its enterprises and business projects. English is spoken everywhere. One can hardly get along without it in Valparaiso. For that matter, English is well understood throughout the country. The time was when Paris was the city upon which all eyes were fixed. Paris is yet the Chilian's idea of dress and art, but London is all else to Chili, and it may be said that it is a nation of anglo-maniacs, although there is not any aping of the English to a perceptible degree. The relationship is largely of business origin, and it came about from English influence making itself felt through the medium of financial channels. English is taught in the schools, and when children are old enough to go abroad, they are taken to London. Of course, they visit Paris, too.

Social life is more formal in Chili than with us. Society distinctions are drawn more definitely. The great families of the nation live apart in a small world of their own. Family counts for much. The chief social functions are the dinner-party and the reception. Even in the middle

classes there is not that joyous freedom of social intercourse which we know. The young man who falls in love must be content with unsatisfactory *tete-a-tetes* in crowded ball-rooms. He must apply to the girl's parents and obtain permission to address the daughter before he is granted any additional liberty. Lovers are never permitted to meet alone until they have been married. Among the *peons* social *lnies* are as noticeably loose. Marriage is indispensed with in perhaps a majority of cases. Men and women live together as fancy prompts. But the sturdy half-breeds are honest fellows, with strong affections, and the family relation in most instances holds as firmly as a contract.

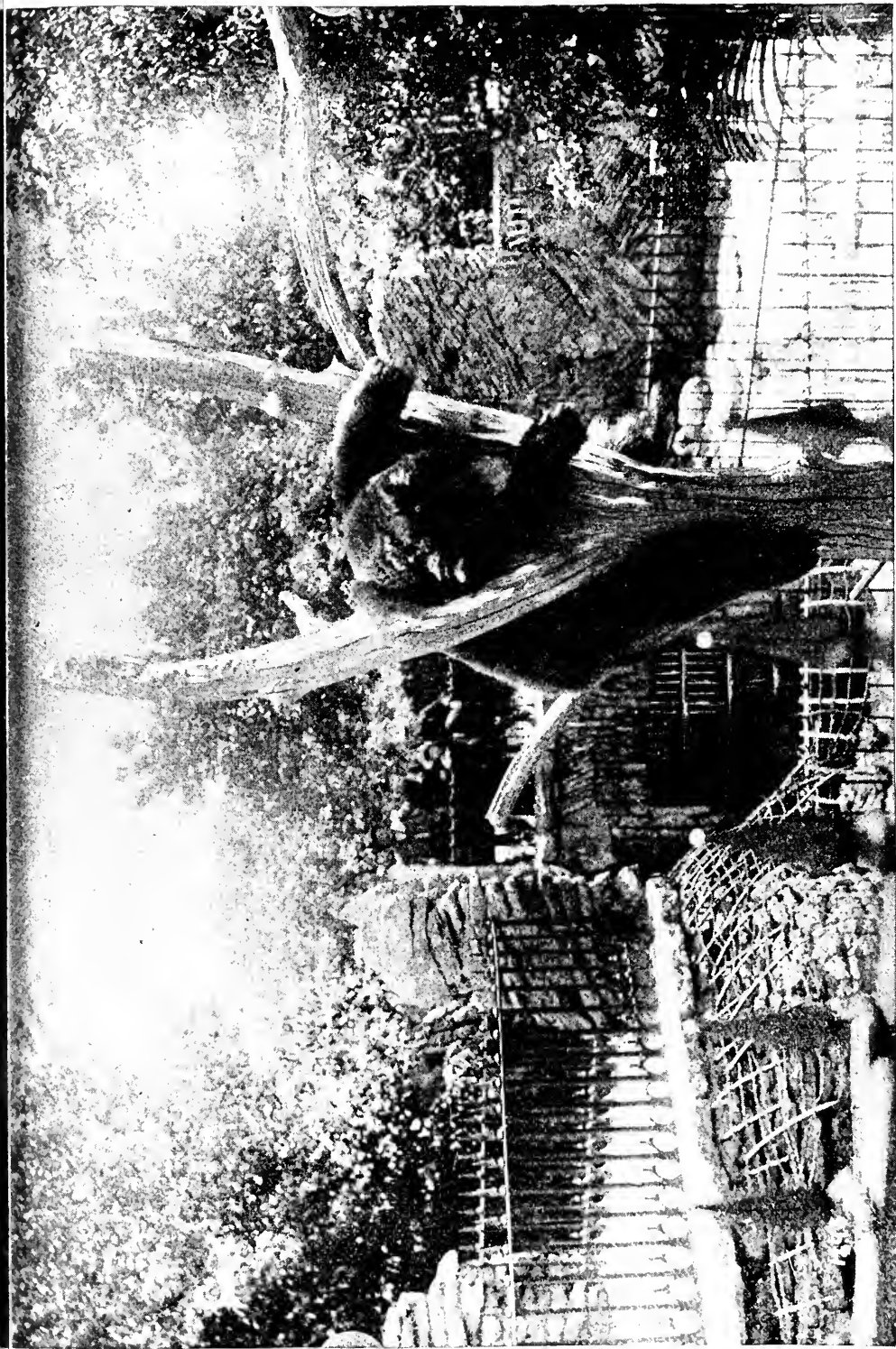
Chilian women of the upper class exhaust the vocabularies of travelers. They are exceedingly slender and graceful, almost always with rich, dark complexions, long, soft and jet black hair, and black eyes under long, drooping lashes. They speak the soft Spanish language with softer voices than their fair American sisters of the Northern Hemisphere. They are educated carefully. Many of them speak English, and a few speak French.

Traveling in Chili is rapid and comfortable. The railroads are well constructed, and the rolling stock is of the best. Express trains make almost as good time as they do in the United States. Parlor-cars are common on the principal roads. The number of travelers is amazing in a nation of 3,000,000 people. The usual explanation is that the lower classes are restless folk, never satisfied with one place, always wanting change. The idleness of the Spanish progenitors and their Indian shiftlessness make the *peons* roving, good-for-nothings, but always happy. They will never work long at a job. As soon as they have something ahead, they knock off and spend it.

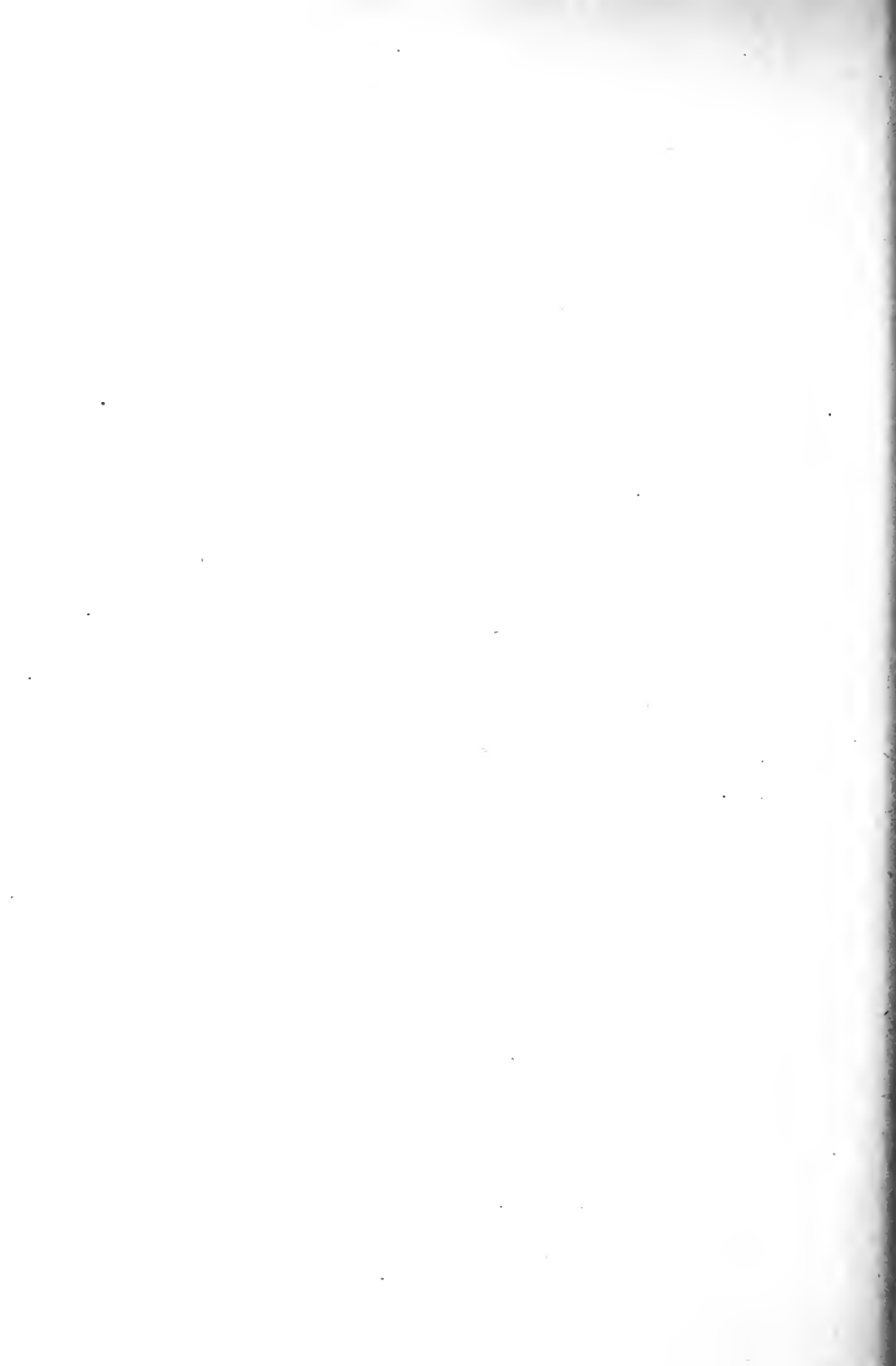
When a train stops at a station in the country, the stranger finds his surroundings interesting. The station is merely a roof of corrugated iron, supported by uprights. The arrival of the train is plainly an event in village life. Everybody is at the station. There are dark Spanish faces, feminine and bewhiskered, the swarthy faces of the half-breeds, and perhaps the dark face of a full-blooded Indian. A uniform and the bright dresses, as well as the cheeks of the girls, are the bits of color. The bustle, the laughter and the merry clatter in the soft Spanish tongue are amusing. If it be a town of some size, a score of persistent newsboys and venders of sausages besiege the passengers. Horsemen with enormous hats and bright-colored pouches ride about, and wagons of primitive build, drawn by oxen, have brought loads of fodder bound for the nitrate fields.

The country districts abound in grand scenery and bits of pleasant and odd rural life. The grape country and the wine-presses interest the traveler, for wine is becoming an important product of the land and is securing a demand abroad. The great grazing districts, with their vaqueros or Indian cowboys, and their rodeos, or round-ups, as our ranchmen term the periodic stock accounting, and the great forest tracts, with their interesting Indian inhabitants, are much talked of by travelers. Amazing tales, too, are told of the game in the southern forests, and of the savage pumas which make life exciting for the mountaineer of the warmer regions.

Let no one sneer at Chili and her people. If it comes to war, it would be strange, indeed, if we did not thrash her soundly. But victory must be fought for. The Chilians are highly civilized and valorous, and if they be few in number, perhaps their wealth and high national



BRUIN AT HOME, LINCOLN PARK.



credit and the impregnable fortifications which nature has built around their country may count for something. We shall not whip them in a day.

ECUADOR.

Ecuador has already signified officially her intention of participating in The World's Columbian Exposition, and has appropriated \$125,000 for her exhibit. Its world-famed Cordilleras looked down upon Pizarro, and the hill-sides displayed to him the agriculture of the Inca civilization. Quito was Pizarro's favorite city and still contains his memorial cathedral. Lake Titicaca, of interest as a body of water, links the present with the past through being the supposed repository of such Inca treasures as escaped the rapacity of the Spaniard. The well-known Chimborazo raises its lofty peaks 21,424 feet into the skies, dwarfing the height of such pigmies as Mont Blanc, of which Coleridge says :

"Hast thou a charm to stay the morning-star
In his steep flight? So long he seems to pause,
On thy bald awful head, O Sovran Blanc."

and of the oft-vaunted claims of Pike's Peak. Ecuador, however, is by no means limited to Chimborazo, for it possesses fourteen other peaks which exceed in height Pike's Peak: Pasto, Sangay, Cambul, Tunguragua, Carguaroza, Cayambo, Cutacaibe, Pichincho, Corazon, Guamani, Ilinico, Quelemdama, Antisana, and the well-known Cotapaxi.

As we all know, the land of Ecuador is somewhat choleric; so that the student of seismic disturbances can there

find an adequate field of investigation. Trachyte, lavas, and pumice, synite and porphyries are likely to be Ecuador's geological contribution.

The rivers of Ecuador, with the exception of the Marañon, a branch of the Amazon, are useful for irrigation and scenic effects, rather than for the uses of navigation; but Ecuador can, through photography, delight as well as instruct visitors to The World's Columbian Exposition. Her fauna includes the cougar, the black bear, the puma, the tapir, deer, the sloth, iguanas, cavies, and the usual variety of bats and monkeys. To the Fisheries Department, to the Entomological display, and to the Ethnographical Department, the exhibits from Ecuador may be expected to add both variety and value.

Her flora is not peculiar in comparison with those of other South American States, but it includes much of value and interest. The best of the popular curative quinine, cocoa, rice, pepper, sugar-cane, cotton, maize, wheat, barley, tobacco, and timber, form articles of commerce. Her mines produce gold, platinum, sulphuret of mercury and emeralds. Her native population still excels in the woven cottons and the fabrics of inimitable coloring which charmed the followers of Pizarro as they delight the modern world.

Ecuador's proposed exhibit may be inferred from its appropriation of \$125,000. Ecuador's showing for 1890 was: Imports, \$695,000; and exports, \$756,211.

IN MODERN HOMES.

Guayaquil no longer appears as it did to the Spaniard, for while the cliffs are still unchanged, their terraced sides now gleam with artificial light, and its canals bear on their bosom the gondolas for which they are so well adapted

and whose anticipated coming led to the name of Venezuela.

THE PILLAGED CATHEDRAL.

Near-by is Quito, so distinguished for its miseries during the Spanish conquest, and whose magnificence wasted upon pagan gods was so promptly converted into means for the gratification of the Christian pillagers, who, by extracting the silver nails of the cathedral, secured twenty-two thousand ounces of this metal so useful to the believers in a bi-metallic currency. Quito at this day may be considered the monk city of the New World; so that not all in vain were the efforts of the faithful. Quito as a Christian city dates back to 1534, and Guayaquil was founded but a year later.

BURIED TREASURE.

It is in this neighborhood that search has repeatedly been made for the buried treasure of the Incas; for the Spaniards were satisfied that the gold which they secured was but trifling in comparison with what the offended natives put beyond their reach.

CARTHAGENA.

Carthagená, in New Granada or Columbia, was rendered by the Spaniards one of the best fortified cities of the world; for it was formerly the entreport for the famous Spanish galleons, and consequently the Mecca of pirate and buccaneer.

THE CITY WALLS.

Its city wall is said to have cost ninety millions of dollars, and to have admitted of forty horsemen riding abreast; for a country which for two centuries yielded many

millions each year to the Crown in spite of the commissions withheld from the "royal fifths" was well entitled to an expenditure relatively so trifling. Indeed, it is to the ancient Peru and to the time of Pizarro that we of this day must turn to have our imaginations sensibly affected; for since the modern discovery of multiplying wealth without creating it, sums less than a hundred millions seem but a qualification for endurable poverty. Thirty years ago the Americans boasted of one family whose accumulated wealth was less than that now gained in a few years by many a shrewd operator who has proved himself equal to his opportunities; but now the spectacle of the magical wand has become so common as to render tame the petty results accomplished by the Benjamin Franklin method. Possibly all this is of the nature of true progress; but it certainly multiplies the difficulties of the voracious chronicler, who must now compete with the Count of Monte Cristo, Mr. Isaacs, Coal-Oil Tommy, Jules Verne, and S. Rider Haggard.

HALL OF THE INQUISITION.

The Spanish Inquisition, it will be remembered, did not confine the sphere of its operation to any such limits as those of Spain, but extended its operations to the Spanish conquests where heresy and infidelity so abounded among the Gentiles of native birth, and where religious zeal found a powerful auxiliary in the popular zeal for the confiscation of the possessions of the wicked pagans. Among the remains of Spanish architecture, we find, as one would expect, the Hall of the Inquisition and the Cathedral.

THE MARBLE PULPIT.

The marble pulpit in this cathedral is so beautifully carved as to be an object of wonder to all lovers of art, but it has other claims to interest. Mr. Curtis, in his capitals of South America,—a work of the greatest interest for the modern reader,—says that this pulpit, having been carved by the most distinguished artists, under the direction of one of the Popes, was shipped to the faithful in Carthagenæ. But before it reached its destination, the galleon was taken by pirates (that is, the navy of some other people) and the sacred pulpit ruthlessly thrown into the sea. Strange to relate, the marble obstinately refused to sink; so the superstitious pirates fled in terror, and the Spaniards again got the pulpit on board ship, although before reaching port the Spaniards were again attacked by yet other pirates and their galleon burned. The supernaturally-protected pulpit, however, refused to be swallowed up by the sea and calmly floated into the very harbor of Carthagenæ, where becoming embedded in the sand it lay unknown and neglected until discovered by a third band of spoliators, who shipped it for Spain. However, Carthagenæ and not Spain was the destination of the pulpit; so that by the intervention of another shipwreck it was once more set free to fulfill its mission. This time it not only arrived in the harbor, but was discovered by the archbishop, who took upon himself the pious task of seeing the wanderer safely established in its proper domicile. After this extract from actual history, let none doubt the story of the escape from a shipwrecked vessel by the mariner who sailed ashore upon a grind-stone, and steered himself with a crow-bar; for this also can be found printed in a book.

GUIANA.

Guiana will, through the British exhibit, bring into sharp contrast colonization among the Latin and Anglo-Saxon peoples. Guiana has, as a part of its unequaled scenery, cataracts which dwarf the Falls of Niagara. The Kamaiba is said by the great Schomburgh to precipitate its water from a height of nearly 1,500 feet, and the falls on Parima River, in the Essequito, of Onoro, of Wamaru-Serika, as well as Raleigh Falls and Stanly Falls are impressive, even when seen through the medium of photography. The Pyramidal Rocks consist of masses of granite quite extraordinary in form. Ataraipu rises in the form of a cone to the height of 1,300 feet; another suggests a petrified tree of fifty feet in height and of dimensions corresponding. The *Mimosa Excelsa* or Miratree is equal to the famous East Indian teak, and forests of it rise from 130 to 150 feet. Valuable trees, unknown even by name to us, are the Green-heart, the Suwarry, the Bully-tree, the Sirwabally, the Crab-wood, and the Purple-heart. Fruits of the guava, the marmalade, the pine-apple are supplemented by those of the anona, the sapodilla, and by Brazil nuts and Suwarrow nuts. To pharmaceutical supplies Guiana furnishes gentian and quassia, sugar, coffee, bananas, cassava; dye-woods and gum copal, rum and molasses, form Guiana's exports. Her fauna contains the jaguar, tapir, armadillo, agouti, ant-bear, sloth, various species of monkeys, alligators, turtles, parrots, humming-birds, the flamingo, the Muscovy-duck, the toucan and the spoon-bill, vampire-bats, snakes without number, insect life, better calculated to delight the entomologist than to promote the comfort of

the natives, and fish whose largest representative is the well-known silurus. Her flora has all the rich variety to be found in South America; and the Victoria Régis lily of our horticultural displays is in Guiana as common as the yellow pond-lilies of New England. It will be remembered that Guiana played no unimportant part during the period of American discovery, although it is still unsettled whether it was first visited by the great Christopher Columbus during his voyage of 1498, or by Vasco Nunez in 1500.

Guiana was the scene of the daring exploits of such British buccaneers as Sir John Hawkins.

PERU

is the Hesperides of the Spanish adventurers, as personified in Pizarro and Almagro; the scene of untold cruelty and the source of a revenue amounting to \$1,000,000,000; the home of a civilization higher than any known before that of modern times. Peru has appropriated \$100,000 for The World's Columbian Exposition, and will instruct and delight the visitor.

The Cordilleras, rising from 5,000 to 10,000 feet, run in double column through the country, creating three series of valleys; while as if to enter into competition with Ecuador, the Nevada de Chuquibamba rises 21,000 feet into the air. Here once was the famous temple of Cuzco, and the land is rich in memorials of the Spanish conquest and of the methods by which the Old World planted its civilization in the new. Doubtless, the recent donation of

\$30,000 to the Ethnological Department of The World's Columbian Exposition, accompanied as it was by the condition that it should be expended upon South American antiquities, and the celebrated collection of one of Peru's own citizens, will enable the display to have rare interest and value. Peru has almost bankrupted herself in building railways, and her displays in the transportation building will have interest, alike for the railroad engineer and for the curious sight-seer.

The mines of Peru seem to be inexhaustible, and gold, silver, copper, lead, iron, quicksilver and coal abound, and will be exhibited. Peru exports metals, nitrate of soda, wool, chinchona-bark, sugar, cotton, chinchilla and hides; while the world-famed deposits of guano, while no longer the undisputed possession of Peru, continue to lend fertility to lands far remote.

Peru has set aside \$100,000 for her proper representation at The World's Columbian Exposition.

ARCHITECTURE.

Modern Peru can exhibit the finest churches, convents, and monasteries in America. Here is still to be seen the palace of Pizarro and the famous building of the Inquisition, whose ceiling was imported from Spain in 1560. Its college of St. Marcus was the first university upon American soil, dating back to 1535; its convent of the San Franciscans is celebrated for the exquisiteness of its tiling, and there is a nine-million-dollar cathedral, a memorial of Pizarro, and in whose crypt reposes the body of the one who erected this costly sarcophagus. Between the years 1630 and 1854, the mines of Cerro del Pasca yielded twenty-seven thousand tons of pure silver, a metal which was too inferior to have great attraction for the

early Spaniards. At Lima resides Ramondi, a distinguished French scientist and archaeologist, and it is to be hoped that his valuable museum will form part of the display at the Columbian Exposition. Peru, between its enthusiasm for industrial progress and its unfortunate wars with Chili, has suffered so greatly as at present to be, as it were, in distress; but even though it may have been overenterprising, there is little doubt but that its future prosperity is assured.

THE RAMONDI-OROYA RAILWAY.

Within its borders is found the Oroya Railroad, the work of the celebrated Meiggs,—Honest Harry, as he was at one time called in California,—and as an example of difficult and skillful engineering, it is without rival in the world.

THE UNITED STATES OF COLUMBIA.

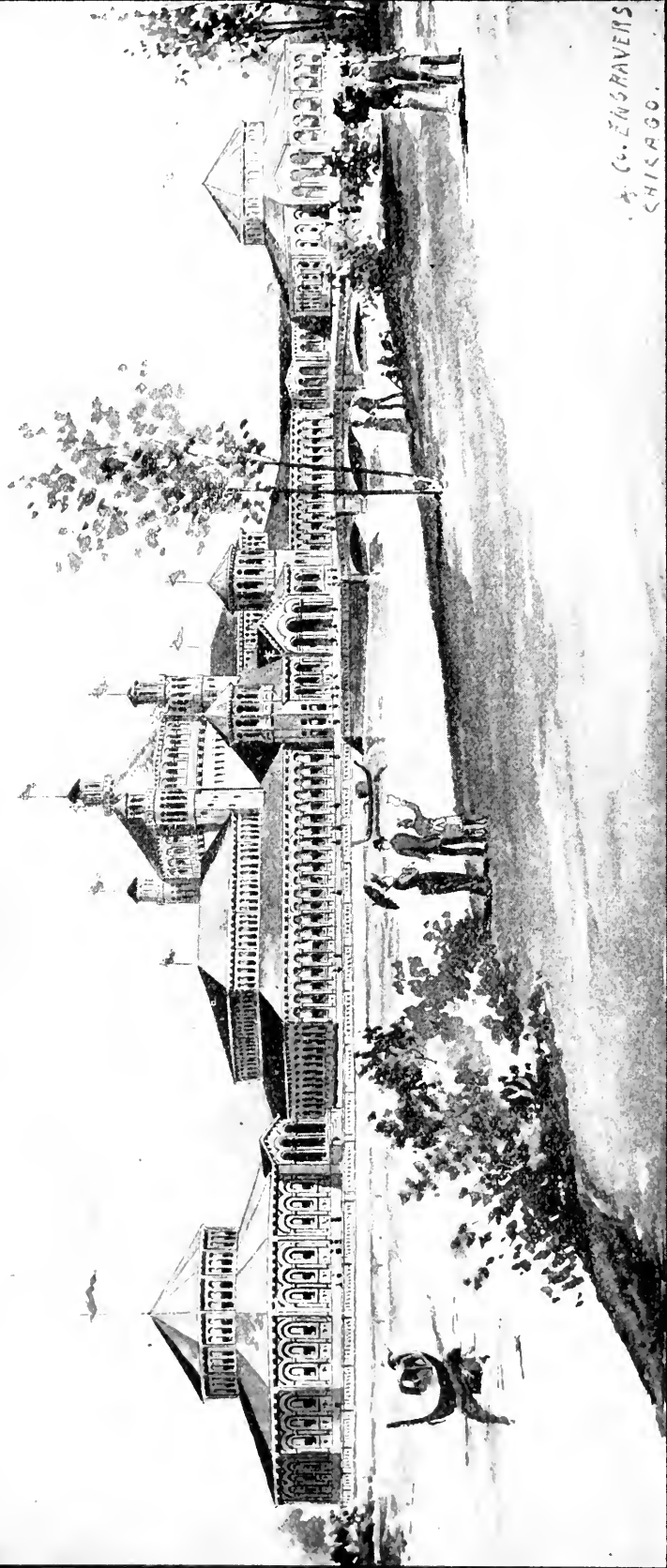
Columbia has as departments, Antiognia, Bolivar, Boyaca, Cauca, Cundinamarca, Magdalena, Panama, Santander, and Tolima. Gold and silver are mined profitably, and the exports consist of coffee, cinchona, earth-nuts, corn, silver ore, calac, dye-stuffs, cattle, and tobacco. The Columbian building at The World's Columbian Exposition is to be built entirely of native materials; so that the exhibit of woods and slates will serve a double purpose.

PARAGUAY.

Paraguay raises 730,000 head of sheep, 32,000 sheep, 62,000 horses, 11,000 goats. The agricultural products consist of yerba, tobacco, maize, rice, wheat, mandioca and cotton. The exports consist of tobacco, yerba, or Paraguay tea, hides and skins.

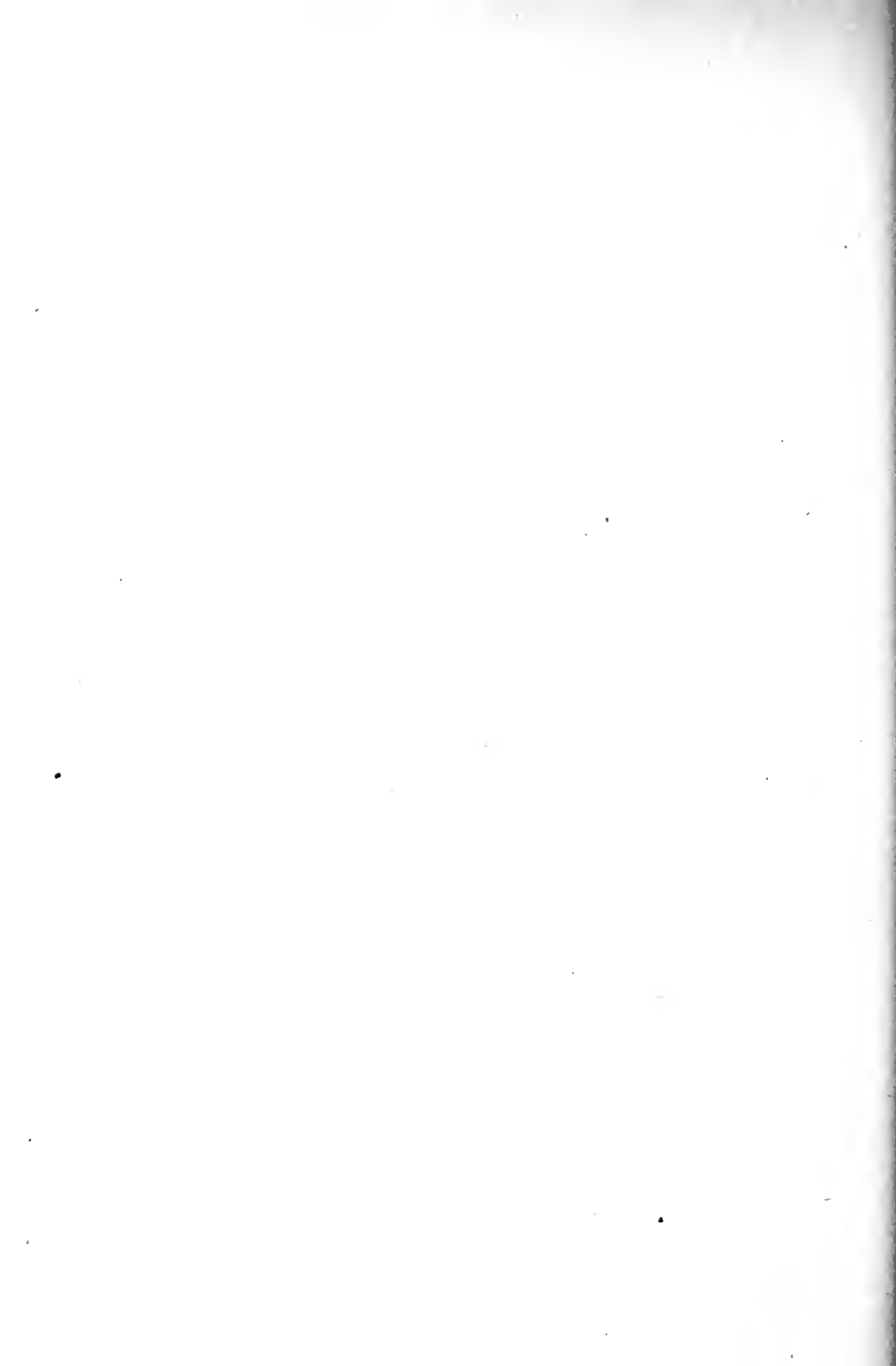
THE BRITISH EMPIRE.

Great Britain's industries in iron and coal will insure interest to many an American producer, for in spite of her own resources America used for the year 1889, 7,692,230 tons of English iron. Everyone knows Great Britain as a purchaser and manufacturer of American cotton; her purchases in 1889 amounted 1,937,462,240 pounds, and in addition to this she imported 700,903,057 pounds of wool. There are 2,538 factories of cotton, 1,793 of wool, 125 of shoddy, 753 of worsted, 375 of flax, 375 of hemp, 116 of jute, 42 of hair, 24 of cocoanut fibre, 623 of silk, 403 of lace, 257 of hosiery and 54 of elastic; the number of spindles in use was 53,731,062, and 1,084,631 "hands" derive their living from the factories. For 1890 the value of importations was about \$2,104,000,000; her exports consist of cotton yarn and fabrics, woollen yarn and fabrics, linen yarn and fabrics, jute yarn and fabrics, clothing, iron and iron manufactures, copper, machinery, coal and chemicals; and these interests will assuredly find representation at Chicago.



A. C. ENGRAVERS
CHICAGO.

FISHERIES BUILDING.



European politics have, during the past thirty years, wrought such changes in geographical boundaries that the visitor to The World's Columbian Exposition may value recapitulation of the various dependencies to the great foreign nations. The British Empire, for example, includes besides England, Scotland, Ireland and Wales, Gibraltar, Heligoland and Malta in Europe; in Asia, Aden; on the Arabian Coast, the Somali Protectorate, and the islands of Socotra and Kuria Muria (these Asiatic possessions furnish coffee, gums, hides, skins, ostrich feathers, piece-goods and tobacco), the Bahrein Islands with their pearl fisheries and coffee. Ceylon, first known to the Portuguese in 1505, passed after three hundred years into the hands of the English and became a depot for the supply of rice, coffee, tea, cocoa-nuts, cinchona, tobacco, cinnamon and plumbago. Next comes Cyprus, famous in history, and exporting raisins, cocoons, wines, wheat, barley, wool, carobs, wheat and flour; Hong Kong, wrested from China in 1841, is the trade-centre for opium, sugar, flour, salt, earthenware, oil, amber, cotton and cotton goods, sandal-wood, ivory, betel, vegetables, live-stock, granite and the silks of Japan and China.

India in great part passed in 1858 under British rule. Baluchistan distinguished by its camel ranches, and exporting wool, hides, madder, dried fruit, bdellium, tobacco and dates; Sikkim, in the Himalayas, with its rice, Indian corn, millet, oranges, tea and forests; the Andaman Islands; the Nicobar Islands; the Laccadive Islands, with their exports of corn; Kamaran Islands; Labuan, with its sago, wax, gutta-percha and India-rubber.

North Borneo produces tobacco, timber, sago, rice, gums, coffee, pepper, gambier, gutta-percha, tapioca, sweet potatoes, coal, gold, birds'-nests, cocoanuts, rattan,

seed-pearls, and timber: Singapore, Penang, and Malacca, which export tin, sugar, pepper, nutmegs, maize, sago, tapioca, rice, buffalo hides and horns, rattans, gatta, India-rubber, gambier, gum, coffee, dyestuffs, and tobacco.

In Africa there is Ascension Island, famous for its turtle-fishing; Basutoland, near Cape Colony, producing wool, wheat, mealies, and Kaffir-corn; Bechuanaland exporting maize, wool, hides, cattle, and wood; British East Africa exporting cloves, sesame-seed, ivory, gum, copra, coir, orchella-wood, wool, and hides; British Zambezia and Nyassaland, Cape Colony, exporting wool, ostrich feathers, hides and skins, copper ore, hair, wine, grain, and diamonds; Mauritius which exports sugar, rum, vanilla, alve fibre, and cocoanut oil; Natal, which furnishes arrowroot, angora-hair, hides, skins, sugar, wool, maize, rum, and gold; the Niger District, embracing Sokoto with its butter-trees, dosia, dates, honey, cotton, and leatherwear; the Oil Rivers District, exporting palm-oil, palm-kernels, India-rubber, ivory, ebony, indigo, gums, barwood, hides and cocoa; St. Helena, with its whale-fishery; Tristan D'Acunba; the Gold Coast, exporting palm-oil and palm-kernels, India-rubber, and gold; Lagos, with its palm-oil, palm-kernels, ivory, gum-copal, and cotton; Gambia, exporting ground-nuts, hides, beeswax, rice, cotton, corn, and India-rubber; Sierra Leone, producing palm-oil, palm-kernels, benni-seed, ground-nuts, kola-nuts, India-rubber, copal, hides, and gold and silver work. Zanzibar, which exports ivory, caoutchouc skins, sesame-seed, cloves, and orchilla; and Zululand rendered famous by its troubles with the mother country, and by the new article introduced by Gladstone into the political

creeds of civilized nations; Zululand, exporting cattle and maize.

In the New World, Great Britain controls the government of the Bermudas, whose exports amount to \$1,363,015; Canada, the Falkland Islands with their sheep farms; British Guinea exporting sugar, rum, molasses, timber, and gold. British Honduras, which has its wealth in mahogany, logwood, fruit and sugar. Newfoundland and Labrador, with their fish, fish-oils, seal-skins and copper ore; the West Indian group, comprising the Bahamas (New Providence, Abaco, Harbor Island, Great Bahama, St. Salvador, Long Island, Mayagnana, Elentheia, Great Inagua and Andros Island), which furnish for export sponges, pine-apples, oranges and fibre; the Barbados, with its sugar and fisheries. Jamaica (with its annexes of Turk's Island, Caicos Island, the Cayman Islands, Morant Cays and Pedro Cays), having sugar-cane, coffee, corn, cocoa, Guinea-grass and salt-raking; the Leeward Islands (Antigua, Barbuda and Redonda, Virgin Islands, Dominico, St. Kitts, Nevis, Anguilla and Montserrat), producing sugar, molasses, lime-juice, cattle, pines, phosphates, salts, cotton, cocoa, timber. Trinidad and Tobago, with sugar-cane, cocoa, coffee, cocoanuts, and strange lake of pitch; the Windward Islands (Grenada, St. Vincent, the Grenadines and St. Lucia), with their supplies of sugar, rum, cocoa, spices, arrow-root, timber, log-wood and cotton.

Then there are Australasia and Oceania, comprising Fip, whose resources include bananas, coffee, cocoanuts, maize, sugar, tobacco and pineapples; New Guinea, which has valuable timber, cocoanuts, sago, figs, spices and gold. New South Wales, whose agricultural products embrace wheat, maize, barley, oats, potatoes, grasses and tobacco,

while it abounds in oranges, and has large pastoral and timber interests, whose mines include gold, silver, lead, copper, tin and coal, and which exports wool, tin, copper, tallow and leather; New Zealand, which exports wool, gold, grain, meats, gums, tallow, timber, hides, skins, leather, live-stock, butter and cheese, and grass-seed; Queensland, with its exports of gold, wool, sugar, hides and skins, tin, and meats; South Australia, which sends abroad wool, wheat, flour and copper ore; Tasmania, whose exports consist of wool, gold, tin, timber, fruit, jams, hops, grain, hides, skins and bark; Victoria, whose crops include wheat, oats, barley, potatoes, and hay, and whose mines yield \$12,296,780, and whose manufactures employ a capital of \$78,969,050 and Western Australia, which exports wool and shells.

CANADA.

North of our grand republic, Prince Edward's Island, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, British Columbia, with its waters beautiful and picturesque, unite to form a federal government, the Dominion of Canada. In the matter of communications this country is unrivalled; the St. Lawrence with its lakes puts it in connection with the commercial sections of the United States and with the open ocean. Art has lent a helping hand in navigation. Lake St. Peter has been deepened, and sea-going vessels have been admitted into Lake Ontario. The Welland Canal lifts the maritime navigation around the falls of Niagara into Lake Erie, opens a direct water

communication through the "Great Lakes" with the "Far West." Besides this great water system, Canada has a net-work of railways. The Grand Trunk Line, one of the longest lines in the world owned by any one company, and under one management, offers direct communication from Portland to Lake Huron and Detroit.

The western extremity of Ontario rises to the bold and picturesque shores of Lake Superior. Here iron, silver-bearing copper ores, copper, zinc, lead, granite, slate and the most beautiful marble of every conceivable color, are found in great abundance; gold and silver in limited quantities. In Thunder Bay, Silver Islet contains one of the richest veins of the metal ever discovered. To the West extends Manitoba, with its calcareous, dry, and friable soil so favorable to the raising of wheat as to cause this district to be one of the richest wheat markets in North America.

The climate of the Northwest and of British Columbia undergoes a remarkable amelioration. The mineral wealth of Canada for 1889 is rated at \$16,500,000.

\$1,098,610 of gold was mined in British Columbia, and Nova Scotia, and other small places in Canada in 1888. Nova Scotia furnishes excellent bituminous coal, while Southwest Ontario supplies gypsum, rock-salt, marls, albertite-rock, phosphate-rock, meat, oil-shales and petroleum.

Settlers and immigrants gather to the Southeastern provinces and Quebec. The forests of Canada number from fifty to sixty different kinds of trees, among which firs, white pine, sugar and ash, maples and black walnut are the most common. The trees on the Pacific slope are almost entirely unknown to the Atlantic slope. 4,081,439 cubic feet of timber was exported in 1888.

The fisheries—a cause of much contention between the United States and Canada, and still an unsettled question—amounted to \$17,055,256 in the year 1888. Nova Scotia, with a coast-line of 1,000 miles, abounding in cod, herring, mackerel, salmon, trout, halibut and other valuable species of fish. In tonnage of shipping she excels all other countries except Great Britain and the United States. The great fur trade has its seat in the north, where the black, white and grizzly bear and deer, buffalo, musk-ox and antelope are found in numbers, roaming over the barren plains, and in the waters the beaver, muskrat, sale-fisher, minx, ermine, seal, otter and others are found. The sea-otter and fur-seal are taken, though sparingly, on the Pacific coast. Whales abound in Hudson Bay and the Arctic Ocean. The St. Lawrence holds in its waters the white whale.

The ornithology of the Dominion is great. The soil of the valleys of Nova Scotia, Manitoba and Prince Edward's Island is rich and fertile, producing all the fruits of the temperate climates. The principal agricultural products are hay, wheat, barley, buckwheat, oats, rye, Indian corn, potatoes and turnips.

The manufacturing industry is confined to those provinces long settled. The sawing of lumber and manufacturing of potash, flour, leather, oils, fertilizers, paper machinery, woolen and cotton goods, are important interests. Ship-building is carried on in Nova Scotia and New Brunswick. With imports \$115,234,931, exports valued at \$89,189,167, and resources from the products of fisheries, the mines, the forests, the agricultural districts and the regions of fur-bearing animals, Canada can, and no doubt will, send a varied, interesting and novel representation to the World's Columbian Exposition.

Nova Scotia has already prepared a collection of Indian curiosities, and the Antigoné Mountain aborigines will for a brief moment live again as we look upon their industries as exhibited in wigwam, hatchet, spear, moccasins, and head-dresses, as well as in their highly ornamented fans.

INDIANS AT THE EXPOSITION.

In this connection it seems proper to call attention to the fact that among other objects of interest at Chicago will be a congress of the Indian Tribes, so that while the ethnologist is supplying any defects of knowledge, the lover of past civilizations may illustrate his readings in Cooper's novels or illuminate the information which has been furnished him through the newspapers in regard to General Custer or General Miles. It will probably be of interest to have a brief chronology of the leading battles with the Indians :

- 1676. King Phillip's War.
- 1704. Burning of Deerfield.
- 1708. Burning of Havrehill.
- 1713. Expulsion from N. Carolina of the Tukuroras.
- 1755. Braddock defeated
- 1763. Conspiracy of Pontiac.
- 1718. Wyoming Massacre.
- 1794. Treaty with the Six Nations.
- 1804. Treaty with the Delawares.
- 1811. Gen. Harrison defeats the Indians.
- 1813-1814. War with the Creeks in Florida.

- 1818. War with the Seminoles.
- 1832. Black Hawk War.
- 1835-1842. War in Florida with the Seminoles.
- 1856. War in Oregon and Washington.
- 1862. Minnesota Massacre.
- 1864. Chivington Massacre.
- 1873. Modoc Massacre.
- 1876. Sioux War.
- 1885. Arizona Massacre.

The War Department has arranged for the presence of representatives from the Sioux, the Navajas, the Mokis, and the Zunis.

AUSTRIA-HUNGARY.

Austria-Hungary (Austria, including Salzburg, Steiermark or Styria, Carinthia, Carniola, Görz and Gradiska, Istria, the Tyrol, Vorarlberg, Bohemia, Moravia, Silicia, Galicia, Bukowina, Dalmatia, Bosnia, and Herzegovina), raises wheat, barley, oats, rye, pulse, buckwheat, maize, sugar-beets, vines, tobacco, hemp, and rope. Its forests admit of a large export trade in timber; its mining, smelting and salt-works employ nearly 125,000 persons; its resources include iron, silver, copper, quicksilver, lead, zinc, sulphur, manganese, alum, graphite, petroleum, ozokesit, and salt; its fisheries engage a fleet of 5,458 vessels; it employs in its factories 2,946,068 persons and produces glass-ware, woolen fabrics, cotton goods, beer and brandy.

CHINA.

China produces rice, wheat, barley, beans, peas, sugar-cane, indigo, cotton, cassia, tobacco, peanuts, tea and silk. Its fisheries are considerable; it is specially successful in the matter of apiaries, aquaria, and pottery. Herds of buffalo, the yak, cattle, sheep, camels, swine, are the interest of cattle-farmers, while the wolf, panther, fox and badger represent the possible contributions to the zoological collection of the World's Columbian Exposition. It may be remarked, in passing, that the rats which are regarded by the Chinese as edible are by no means the creatures so unfriendly to us. Horticultural Hall should receive much of value from China, for her citizens are specially skilled in all kinds of gardening.

Man-power is the chief means of transportation, for the Chinese have solved the question of over-population quite differently from Malthus.

Mr. Gray, in his charming volumes upon China, gives the following information:

Restaurants, hotels, tea-saloons, and soup-stalls are everywhere numerous throughout the empire. The restaurants are generally very large establishments, consisting of a public dining-room and several private rooms. Unlike most other buildings, they consist of two or three stories. The kitchen alone occupies the ground floor; the public hall, which is the resort of persons in the humble walks of life, is on the first floor, and the more select apartments are on the second and third floors. These are, of course, resorted to by the wealthier citizens, but they are open to persons in all classes of society, and it is not unusual to see in them persons of limited means. At the

entrance door there is a table or counter at which the proprietor sits, and where each customer on leaving pays for his repast. The public room is immediately at the head of the first staircase, and is resorted to by all who require a cheap meal. It is furnished, like a café, with tables and chairs, a private room having only one table and a few chairs in it. On the walls of all the apartments are placards, by which the guests are admonished to not lose sight of their umbrellas, fans, articles of wearing apparel, etc., and assured that the proprietor does not hold himself responsible in case of loss.

It has been maintained by some writers that the Chinese were the inventors of chain suspension-bridges. In the *Wonders of the World in Nature, Art and Mind*, published by Walker in New York in 1850, we are told that there is a famous bridge of this kind on the road to Yunnan, in the province of Kwei-chow. It is thrown over a rapid torrent between two lofty mountains, and was constructed by a Chinese general in the year 35 of the Christian era. At each end of the rocky mountain a gate has been erected between two stone pillars, 6 or 7 feet high by 17 or 18 feet wide. Between these pillars four chains are suspended by large rings, and united transversely by smaller chains. Over these chains is a flooring of planks of timber, which are renewed as often as they become decayed. Other chain-bridges have been constructed in China in imitation of this, but none of them are either so large or have been so durable. Nor are the Chinese strangers to pontoons or bridges of boats. There is a bridge of this kind across the river at Ning-po, in the province of Chit-kong; and another, on a very small scale, across the grand canal at Tsei-tsin. The largest of the kind, however, with which I am acquainted, is one across

the northern branch of the Canton river. It almost rivals those, which for military purposes, Darius threw across the Bosphorus and the Danube; or that famous bridge which the impulsive Xerxes, on the occasion of his disastrous expedition to Europe, threw across the Hellespont.

As the farmers are very industrious they become great adepts at reclaiming land, and all along the banks of the rivers, travelers may find fruits of their industry. They turn the slopes of the hills to account, and in the absence of natural levels, form artificial terraces, preventing the earth from being lashed by the former and later rains. It is intended by this arrangement a sufficient supply of water should be retained for the irrigation of the crops. Such cultivated terraces are numerous in the villages, in the rear of Whampow and in the neighborhood of Fowchow.

With the view of superintending farmers and agricultural laborers in their operations, an agricultural board is established in very nearly every village throughout the country. This board is presided over by three or four aged agriculturists, upon whom the eighth degree of rank is conferred. This board insists upon each farmer cultivating his lands to the fullest extent, and sowing, and reaping in due season. A farmer who is negligent in these respects is taken, at the suggestion of the board, into the presence of the magistrate to receive a flogging. The number of stripes is in proportion to the amount of land he has left uncultivated. Nor is the law confined to renters. There is a law that enjoins all landed proprietors to see that their estates are kept in a high cultivation, and the penalty inflicted for a breach of this law is an entire confiscation of the neglected property to the crown. Farming in China and Great Britain involve very different

outlays. In Great Britain it is impossible for a man without capital to enter upon a farm. In many of the provinces of China, the reverse is the case, as a Chinese farm—I speak more particularly now of the South of China—is without stock. The government authorities frequently receive petitions from poor farmers asking to be appointed farmers of public lands, as the government sometimes appoints men acquainted with husbandry to farm its estates. Like their masters, the agricultural laborers are very industrious. As in some parts of England, women are employed as well as men. The lands in China are all freehold, that is, held by families under the sovereign on the payment of a certain annual tax. The taxes are regularly paid to district rulers, who generally go on a circuit through their respective districts. The land-owners receive receipts which they carefully preserve, as they have to produce them when called for the current taxes next year. Without them they would most assuredly be called upon to pay taxes again. Should the crops be destroyed either by inundation or insects, the land-tax, is not according to law, to be exacted. The inquisitious Mandarins, however, in want of money, too often disregard this law. In the 25th year of the reign of the Emperor Taou-kwang, a gentleman named Wong, Kap-Sze-Chung, incensed against the mandarins of Canton for exacting taxes from the farmers whose crops had been destroyed in an inundation, memorialized the Emperor, who immediately issued an imperial decree against the practice. When the farmers have been deprived of their crops by the inundation, the representatives of all provincial governments are authorized to advance them money to buy fresh seed. They must repay the sum advanced on or before the expiration of a period of ten years. The lands and houses in each dis-

strict are carefully registered at the office of the district ruler, and no sale can be effected without his cognizance.

The agricultural implements which are in use among the Chinese, include the ordinary kinds and are very simple. They consist of the plow, harrow, spade, hoe, flail, reaping-hook, winnowing-machine and various appliances in connection with irrigation. The plow consists of a beam-handle and share with a wooden stem, and a rest behind instead of a moulding board. It is, I think, altogether similar to the plow which is in general use throughout Asia Minor and Palestine. With such an implement it is impossible for the farmers to plow their lands to any great depth, and were they to make use of a sob-soil plow, their crops would be much more abundant. A change like this is not the simple matter which it may perhaps seem to the reader, for it would be more necessary to use more beasts of draught. The Chinese plow is so light that the ploughman, on his return from his labors at the close of the day, often carries it on his shoulders; and among the aborigines a farmer may sometimes be seen guiding a plow to which his wife is yoked. Instead of the plow, a large wooden hoe tipped with iron is sometimes used by small farmers for breaking up their fallows, its use doing away with the expense of a yoke of oxen. In the cultivation of the hill lands, which, when formed into terraces, yield a considerably return of grain, the hoe is invariably used by all classes of farmers. The harrow used in the cultivation of rice lands, is provided with three rows of iron teeth, above which there is a handle by which the laborer holds the implement and presses it into the earth. That used in the central and northern provinces of China, where wheat, barley and millet and the principal products is very similar to the har-

row used in England, only not so large. China raises wheat, barley, maize, millet, rice, sugar, opium, tea and silk. It has mines of coal, iron and copper. It exports tea, silk, sugar, straw-braid, hides, paper, clothing, china-ware and pottery.

FRANCE AND DEPENDENCIES.

In Liberty Enlightening The World, the popular and influential republic of France will join the United States in welcoming every foreigner entering the New York Harbor to a happy sojourn at the World's Columbian Exposition. With a coast-line of 132 miles, an area of 202,579 square miles, mountains in the south, west and east, cool breezes from the north and balmy spring zephyrs from the Mediterranean sea—with all these advantages, France will not fail to be well represented in 1893. In the Southern part of France the olive is cultivated, together with the orange, lemon, postachio and caper; the apple, pear, plum and maize, hemp, madder, saffron, hops and tobacco belong to a more northern district. Along the Bay of Biscay the sea-pines flourish. The oak and elm trees form an extensive, valuable and imposing forestry in the western plateau. From this department our great Exposition might expect an exhibition of the various implements; species of the birds and of the fine breed of horses found on the plains, with an arboretum of 200 varieties of resinous trees. From the picturesque vine-clad mountains of the south of France comes world renowned champagne, Burgundy and Bordeaux,

while the northern products furnish the cider and perry. Altogether an agricultural rather than a manufacturing country, France has no compeer in articles calling for taste, ingenuity and delicate manipulation. To Lyons, Paris and Tours one looks for the choicest manufactures of silks, laces and jewelry. Beauty of material, purity of design, elegance of form and rich ornamentation of the products of the establishments at Limoges, Sevres and Bayeux have satisfied the lovers of china and glass-ware, and powerfully stimulated and promoted the ceramic industry in France.

For quality and character of work, technical accuracy and poetic feeling France is worthy of great praise. From the art atmosphere we look forward to a display that will rival that on the walls on the department of arts in painting, sculpture, bas-reliefs, architectural designs and engravings. The manufactures of steel and iron and the products produced from these metals, France has been successful beyond expectation. Beds of coal abound, and the mountains generally have a nucleus of granite. Lead is one of the chief minerals; manganese, copper, tin, marble and potter's clay also abound.

France will, no doubt, make an exhibition worthy of a great republic, not only in departments of fine arts, but even in those of industry, commerce, machinery, manufacturing, natural products and mechanical arts.

France has voted \$400,000 for her display at the World's Columbian Exposition. Algeria raises wheat, barley, oats, wines, olives, tobacco, cattle, sheep and goats. Its iron mines yield 437,643 tons, and silver, copper, lead, zinc, and mercury are found. It exports consist of esparto and other paper-making fibres, iron ore, barley, copper and lead.

Madagascar has gold, copper, iron, lead, sulphur, graphite and lignite; it breeds cattle; it raises rice, sugar, coffee and sweet potatoes; its forests have great value; its industries include silk and cotton-weaving, rofia-palm, fabrics, and metal work.

From Réunion France derives sugar-cane, coffee, manilla, spices, beans, maize, rice, wheat and cattle.

From Senegambia or Senegal, Du Sud and the Sudan she receives gum, groundnuts, india-rubber, skins and valuable woods.

Tunis supplies for export wheat, barley, wines, live stock, alfa, olive-oil, tan, wool and woolen goods, and sponges.

Guadeloupe has sugar, coffee, cocoa, vanilla, spices, manioc, bananas, sweet potatoes, rice, Indian corn, vegetables, cotton, tobacco, ramie-fibre, India-rubber and the woods from her rich forests.

Martinique has sugar, manioc, sweet potatoes, bananas, coffee, cocoa, tobacco.

From St. Pierre and Miquelin France receives large supplies of codfish and of cod-liver oil.

New Caledonia and its dependencies supply coal, ore, nickel, chrome, cobalt, wheat, maize, pine-apples, coffee, sugar, cocoanuts, cotton, manioc, vanilla and the products of the vine.

Tahiti has copra, cotton, sugar, coffee, pearls and shells.

Indo-China embraces Annam with its resources of seeds, tobacco, cinnamon, cotton, coffee, sugar and tea; Cambodia with its betel, rice, indigo, tobacco, sugar, silk, fish and cardemums; and Tonquin, which raises rice, sugar, silk, cotton, fruit, tobacco, pepper, oils, copper and iron.

THE GERMAN EMPIRE AND DEPENDENCIES.

Germany, although unable to participate in the early explorations of this continent, has played no unimportant part in the history of the United States. The following brief statement of the German record in America will make it evident that the individual service rendered during the American Revolution was but an earnest of the ready response of the German-American population whenever the liberty which they so dearly prize is at all threatened. A forcible and just statement of some of the equitable claims of the German-American has been made by Colonel R. J. Rombauer :

It goes without saying that our fellow citizens of German extraction will be well represented at the World's Columbian Exposition. In the course of generations a large number of Germans have been absorbed by the American nation ; their traits are clearly discernible in our people to-day ; they have contributed largely to forming the cosmopolitan character of the American, which now in its transition phase assumes a continental character. All large nations have formed by accretion, accumulation, absorption, and development, adopting the good features of the constituting elements, and in doing so, elevating the whole to a higher plane of progress.

The distinctive features of different nationalities are not lost at once. Like the waters of the Missouri and Mississippi, they flow for miles and miles before forming one homogeneous stream, which unites the qualities of both.

The isolated continental position of America admitted the formation of a nation almost without conquest. The

spirit of civil and religious liberty, which the first settlers planted upon this soil, has borne golden fruits, by attracting congenial elements through immigration.

Saving the period of the first settlement, this was at no time more apparent than after the political waves of 1830 and of 1848. The dissatisfied European, failing to shake off the oppression which centuries of feudal and hierarchial organization had saddled upon him, sought refuge for his ideas and their free development under the banner of the Stars and Stripes. Especially strong was this movement from Germany, and a great many of her politically most advanced sons came over to the Union and settled on the banks of the Mississippi, the shores of Lake Michigan and on the prairies of the West. They brought with them the finest traits of the Father-land; a manly adherence to conviction, patient perseverance, frugality, a strong sense for system, collective organization, social amusement and an unswerving devotion to public education.

It was not long before they paid their debt of gratitude to their individually strongly developed American host, who had welcomed them to these hospitable shores. In the hour of this nation's great trial the most systematic and effective organizations were formed by these adopted citizens. In a few days St. Louis alone raised the regiments and a number of batteries, chiefly Germans. Cincinnati, Chicago, and Milwaukee rivalled this example.

The Turn-Vereins were almost everywhere the centres of this first movement as they are at present the leaders in the cause of physical development and recreative social amusement.

A numerous and vigorous representative press animates the American German in his exertions and keeps up a

useful mental communion with Europe. It reflects the rays of the great American example on the other side of the ocean. Thousands of industrial enterprises, some with a deserved world-wide fame, bear evidence of the thrift of the Teutons. Who can doubt that they can speak for themselves in the Great Columbian World's Exposition in Chicago.

Germany has made an appropriation of a quarter of a million dollars for her national display and applied for nine acres for the erection of her buildings.

Prussia raises wheat, rye, barley, oats, potatoes, hay; manufactures beet-root sugar and beer; mines coal, iron, lignite, zinc, copper and lead.

Bavaria adds to the cereals vines and tobacco, mining products and brewing.

Württemberg cultivates wheat, rye, barley, oats, vines, breweries and works mines.

Saxony, in addition to agriculture, manufactures textile fabrics, machinery and tools, stone and earthen ware, paper and leather; its distilleries, likewise, are an important interest.

Baden adds to the cereals, the cultivation of pulse, tobacco, hemp, hops and chicory. It manufactures silk ribbons, felt and straw hats, brushes, leather, paper, cardboard, clocks, musical instruments, machinery, chemicals and cigars.

Hesse produces minerals to the amount of \$429,700.

Brunswick, like Hesse, has a considerable mineral output, amounting to \$694,000.

Hamburg is the German New York, and serves as the great seaport of the empire, being inferior to Bremen only.

Bremen's commerce may be inferred from its having

imports amounting to \$221,180,879, and exports of the value of \$209,498,717.

Alsace-Lorraine is known to the reader through the Franco-Prussian war. It is rich in cereals, and in tobacco and vineyards, and it manufactures cotton as well as mines for minerals.

From Togoland Germany can draw maize, yams, potatoes, tapioca, ginger, bananas, cocoa, ivory, oil palms, caoutchouc, and dye-woods.

The Cameroons produce cocoa, tobacco, ivory, palm-oil, dye-woods, maize, yams, tapioca, bananas and ginger.

East Africa supplies ivory, copal caoutchouc and sesame.

Southwest Africa, hardly as yet developed, yields copper.

From the Western Pacific Islands come areca, sago, bamboo, ebony, tobacco, live-stock, copra, cocoanut fibre, sandal-wood, tortoise-shell.

The German Empire possesses 34,347,000 acres of forests, produces coal, lignite, iron, zinc, lead, copper, rock-salt, potassic-salt, silver, tin, sulphur, sulphuric acid, gold, nickel, bismuth, vitriol, chemicals. It manufactures machinery and instruments, textile fabrics, paper, leather, india-rubber, woodenware, beer, wines, and refined sugars. In all that constitutes the civilization of the period Germany holds high rank, and those interested in literature, music, art, science, mechanism, of social questions, already recognize their obligations to the Germans, and expect to have these increased by the displays and congresses at the World's Columbian Exposition.

But Germany in human history is best represented by Martin Luther, so revered by Protestants, so that as a

fitting tribute we add a poem in honor of the great reformer :

THE MONK THAT SHOOK THE WORLD.

Raise up the grandest monument the world has ever shown,
To the peerless Martin Luther, whose name we proudly own;
To the grand old German hero let the banner be unfurled,
To the leader of enfranchised thought, the monk that shook the world!

There was a home of poverty in a little German town,
Where old Hans Luther raised his boy with scourge and checking frown;
And yet it was, in after years, a home of which the son
With love sincere and gratitude reaped fruit of what was done.

O! happy German homestead, wherein young Luther dwelt;
For his father at his bedside in the evening often knelt,
And o'er the sleeping child to God would most devoutly pray
That He his footsteps e'er would guide in wisdom's shining way.

Mansfeld, Magdeburg and Eisenach their glowing tribute pay,
While good old Herr Trebonius takes off his hat to say,
"Here may, perchance, be rulers, or men of wondrous fame."
But had he guessed the influence of good old Luther's name.

The Fatherland his presence feels—her own great "Father" comes,—
His watchword, "God Our Refuge," re-echoes through her homes.
From north to south, from east to west, his earnest words are hurled!
O! what a glorious hour for the monk that shook the world.

What cared the sluggish Leo in the Papal chair at Rome,
That Tetzl sold indulgences to guild St. Peter's dome?
If mid the general ruin wrought he might be found to thrive,
And, so, the shameless prior stood, all human souls to shrive.

But there arose the genius of Luther's wondrous mind,
Than he, none other did possess, more gifts and courage kind;
His spirit, will, and character into the world were hurled,
So he became the Iron Monk, the monk that shook the world.

Against the foul disorder his mighty soul did strive,
When he nailed upon the castle church, his thesis ninety-five.
The ringing of the hammer's strokes found echoes in many lives,
As ten thousand times ten thousand brake off the Papal gyves.

And Romish thunders gathered thick, their bolts of wrath were full
When Luther hurled the gauntlet back and burned the papal bull,
Defying Satan's minions he bides the Emperor's terms,
And with a brave and trustful heart he turns his face toward Worms.

Then Freedom felt her pulse beat high in that eventful day
When in that famous diet he dared to bravely say:
"Recant I will, if proved wrong by methods Scriptural;
Hier steh ich! Anders kann ich nicht! Gott hilfe mir! Amen!"

The old Thuringian Wartburg—how it tried his mighty soul!
Was this, of all his conflicts sore, the recompense, the goal?
But in the irksome Patmos the still small voice he heard
And there began for fellow-man to write God's holy word.

Hail, many-sided hero, so liberal and so kind,
The volumes of thy table-talk attest thy well-stored mind.
Thy Bible, in its fullness, strength, tenderness and power,
Remains the German Fatherland's richest and purest dower.

Ho! Emser, Eck, Erasmus, Miltitz and Cajetan,
More feared ye the pen of Luther, than he the papal ban.
Remonstrances and entreaty like autumn leaves where whirled
When he arose, defending truth, the Monk that shook the world.

He was the greatest hero who followed the Apostle Paul,
And the mantle of that chosen one upon him seemed to fall.
Religion and all progress still reveal his influence grand
In moulding thought, and showing all things 'neath God's guiding hand.

Then raise the grandest monument the world has ever shown,
To the peerless Martin Luther, whose name we proudly own.
To the grand old German hero, let the banner be unfurled!
To the leader of enfranchised thought, the Monk that shook the world!

—[REV. GEORGE C. HENRY.]

GREECE.

Greece has much of interest to show the world, whose daily life bears witness to its obligations to her past, but it is to be presumed that persons in general are less familiar with modern Greece. She exports live stock, fish, cereals, oil, timber, mineral products, chemicals, textile fabrics, metal goods, confectionery, millinery, pottery, glassware, hides, skins, woolen goods, wines and spirits. Possibly the best preparation for an acquaintance with modern Greece is an acquaintance with the exhilarating descriptions to be found in the work called *Hellas*, whose author is Denton J. Snider.

HAYTI.

Exhibits from Hayti are of interest not only in themselves, but also because during his first voyage Christopher Columbus discovered the island, December 5, 1492. Under the name of Hispaniola the island is likely to become more than popularly known, for it was the scene of so much Columbiana as to play no small part in the celebration of any anniversary connected with his name. The natives, as is doubtless known to every reader, were speedily exterminated by the Spaniards, the great Christopher himself endeavoring to redeem his promises of wealth for Spain by enslaving the aborigines and seeking to make his remittances by drafts of human beings. It was here that Columbus was deposed, that the fleet of Bovadilla was wrecked and that much of Spanish history in America found its location. It was here that piracy became such a fine art as to originate the familiar word buccaneer. Hayti exports coffee, cocoa, mahogany, logwood and cotton. Hayti cannot but create interest in her memorial of the great Admiral.

ITALY AND DEPENDENCIES.

Italy is also to have a Columbian Exposition, so that she should be able to greatly enrich the display at Chicago. Italy, as the successor of Rome in the modern civilization, has held quite as extended a sway, for it would be impossible to write the history of any country

without taking account of the Italian influence. To be sure Portugal changed the routes of trade and made her own ports and those of Spain the maritime emporiums ; but the Italian influence is felt in every movement down to the time when the United States had become a nation. While doubtless Dante is the Italian Milton, her literature includes many a more grateful writer and her schools have turned out every description of ability, the latest manifestation being the philosopher, Rosmini, or the Columbian biographer and commentator, Tarducci whose work translated into English can be purchased in Michigan. The farm products consist of wheat, barley, oats, maize, pulse, rice, rye, flax, hemp, potatoes, chestnuts, olive-oil, wine, tobacco, and fruits, and silk cocoons. Her silk factories are celebrated, and her forestry is extensive. In her fisheries she employs 20,000 vessels, and 60,000 fishermen. Her mines yield iron, copper, manganese, zinc, lead, silver, gold, antimony, mercury, iron pyrites, mineral, fuel, sulphur, salt, graphite, boric acid, marble.

Abyssinia and Shoa export skins, ivory, butter, gums, mules, and timber.

In another place Italy's possessions in the matter of the Fine Arts has been adequately set forth by a great English poet. The determination to hold as one of the World's Columbian Exposition Congresses a session of the Roman Catholic hierarchy indicates another direction of Italy's intellectual power. Possibly the reader can best put himself in relation with Italian life by reading George S. Hillard's Six Month's in Italy.

MEXICO AND HER EXHIBIT.*

The people of Mexico are manifesting great interest in The World's Columbian Exposition as the date of opening draws near. The indications are that Mexico will furnish an exceedingly attractive exhibit in all that can be successfully transported to Chicago, by rail or by steamship. The following communication was directed by the Department of Fomento to the Department of Communications and Public Works, and is now being acted upon:

“The Government of Mexico having accepted the invitation of the United States to take part in the International Exposition which will be held in 1893, and this department having commenced to take measures and give orders to make the exhibition of Mexico effective and worthy of the former occasions in which Mexico has taken part in International Expositions, we have the honor to address your department the suggestion that the railroad companies and steamship lines of the Republic be invited to contribute maps, profiles, views and other data of the exposition. The fact that these companies have in former expositions aided materially in lending their assistance to the Government in the way of reduced rates of transportation to and from the various points in this country, would make it seem very appropriate for you to ascertain what concessions can be obtained from these corporations during the Exposition of 1893, and inform this department of the result of your inquiries.”

A careful study of the topography, climate and inhabitants of Mexico reveals many striking characteristics, chief of which is its desire to mingle with other nations

*Charles W. Brown [*Inland Journal of Education*.]

in The World's Expositions, where the products of the soil, mines and shop are brought into comparison.

The Republic of Mexico was formerly called New Spain and forms that part of the Western World that unites the southern and northern hemispheres, and separates the waters of the Pacific and the Mexican Gulf. From Cape Catoche, Yucatan's most eastern extremity, to the imaginary boundary line between Lower California, it is 2,200 miles. The greatest width measured on a direct line some two hundred miles north of Zacatecas, is 1,200 miles.

The diversity of climate is nowhere more marked than in Southern Mexico. In the torrid—moist, low lands—coffee, rice, sugar-cane, cocoa and indigo are grown; and forests of mahogany, ebony, palms, orange, lemon and citron trees and dye-woods are indigenous to this country, the latter coming from the region of the *Bordilleras*. On the plateau, corn, wheat, rye, barley, tobacco, cotton and such trees as the oak and walnut are found. Chemicals of all descriptions, flax, hemp, hides, skins and other articles will form an endless variety of exhibits and the *hennequin* fibre of which most of the rope is made, the cultivation of which affords occupation to a large portion of the population of the state of Yucatan, will be one of the most extensive and instructive of the exhibits. On elevations ranging from 3,000 to 5,000 feet are many extensive cattle ranches, affording excellent grass and hay. Fir, pine and cedar thrive in higher altitudes, above which, crowning the highest elevations, perpetual snow and ice have lain for centuries.

The climate of Mexico is divided into three zones—*Tierras Calientas*, signifying hot lands, and having an elevation rarely exceeding 900 feet; *Tierras Templadas*,

signifying temperate lands and ranging from 900 to 5,000 feet; and Tierras Frias, cold, or rigid, reaching to the highest elevations. At an altitude of 15,000 feet all plant life ceases and such elevations as Popocateptl, Citlaltpetl and Iztaccihvatl send their spires more than 2,000 feet into fields of ice and snow. Cactus grows on all soil, though it is found in greater abundance on elevations ranging from 3,000 to 10,000 feet.

Granite forms the highest summits of the mountains wherein mica-slate, syenite, gneiss, rocks of many varieties are found; while the prevailing rock is porphyry, many are inclined to trachyte; clay-slate and limestone contain those rich deposits of the precious metals for which Mexico has long been famous. Salt-rock and salt-springs are found in the State of Oajaca and near San Juan de los Cues.

What can we not expect from a land so rich in minerals, a land whose soil produces everything in the vegetable kingdom from the tender blade of grass to the huge forest oak? From the metals in the mines are made all things into which tin, copper, lead, iron, silver and gold are shaped. From the trees of the swamp-like forest we get our finest mahogany and ebony furniture. Cannot Mexico cover the entire range of manufactured articles in wood and metal?

The Mexican Gulf and bays on the eastern coast offer little or no harbor shelter for gulf and ocean steamships. The ocean current sweeps around Yucatan on the east causing a continual increase of sand-bars, extension of the beach, and barring of the river mouths. On the west side abundant harbor shelter is offered for hundreds of the largest ocean steamers; Lower California being a part of Mexico, splendid anchorage can be had in the Gulf of

California both on the east and west sides of the gulf.

One great disadvantage at which Mexico is placed is the few navigable rivers extending into the interior. In the lower country west of the Cape Catoche the few rivers flowing eastward resemble water-falls, cataracts, cascades and rapids rather than navigable streams carrying merchantable goods to foreign or coast ports. These streams are formed entirely of melting snows in the elevated regions and during the season when the heated winds from the south blow over the *meses*, the streams become torrents in their maddened rush seaward and at dry seasons following the spring and summer freshets the channels of their periodical streams are dry gorges. The Rio Grande on the north, which marks the boundary between the United States and the Republic of Mexico, is the largest river, and as this stream flows along-side rather than through the country, Mexico can claim but the half of this great river. The Rio de Tampico is the second largest river in Mexico, and though 200 miles long it is navigable but 40 miles in a south-westerly direction as far as Panuco. The Rio Tolotlan is the largest river in Mexico with the exception of the Rio del Norte and is formed by the junction of the Laja in Guanajuato. It has a length of 700 miles, emptying into the Pacific Ocean by several mouths near San Blas. The river has many rapids and is in the rainy season an impetuous torrent.

Wild animals are extremely numerous; the bison, grisly bear, tapir, jaguar, cougar, ocelot, jaguarundi, tiger, tagulcati, javali, porcupines, ant-eaters, gluttons, sloths, weasels, polecats, armadillas, cavies, monkeys; manatee, or sea-cows, whales and seals inhabit the waters of the west coast; birds of all species, including the calaudra,

which is found only in Mexico, Mexican crocodiles, and alligators, snakes of every description, including two species of the boa, likewise abound.

The ancient Mexicans knew nothing of the use of beasts of burden. The llama was wild and seemingly undesirable for domestic purposes; from the bison, sheep and goat they derived little or no benefit. "The dog has always been a favored animal with the Mexicans and has been used as a beast of burden to carry their tents, draw their baggage, as among the savage Comanches to the north. In the days before Cortes and his conquering hosts invaded this savage country, the Mexicans kept only the small, dumb dog, which they fattened for the table.

The Spaniards introduced horned cattle and horses which subsequently roamed wild, and to this day vast herds and droves occupy the plains of Jalisco, Durango and Chihuahua.

A close observation of the dreariest and wildest regions of Mexico proves that where mineral predominates and mines are opened, cultivation and settlements follow. This is particularly so in the Cordilleras, Durango, western Chihuahua and extending from Zelaya and Salamanca to Silao, Guanajuato and Villa de Leon.

The scarcity of water in the table-lands, where the soil permits of a higher state of cultivation, prevents successful farming, though irrigation is doing much to bring the soil to a better state.

Maize is the leading cereal. In higher altitudes wheat, barley and oats are successfully raised, and bananas, manioc and tapioca in Tierras Calientas by the sea. Maguey, a plant from whose sap a drink is made for all classes, grows in all latitudes.

We may, however, expect from Mexico in addition to the antiquities which mark the civilization of Montezuma and of Cortes, and the early Spanish occupation, photographic representations of scenery surpassing in beauty and grandeur that to which we are accustomed: illustrations of dress, manners and customs with which we are unfamiliar, and a display of the treasures which Mexico exchanges for her imports.

The policy adopted by President Diaz, with regard to having all concessions declared forfeited where the terms of the contract are not fulfilled to the very letter by those to whom the grant is made, is being closely followed by the government, and a number of important enterprises which had been inaugurated by American capitalists in the republic, have recently had their career cut short because the promoters were slow in complying with their part of the contracts.

The native flora of each state will be shown at the Exposition, under the direction of Chief Thorpe, who has enlisted the lady managers to undertake the collection of specimens.

Mexico has made a World's Fair appropriation of \$50,000. This is only preliminary, however, and it is fully expected that the whole of the \$750,000 which was asked for, and perhaps more, will be voted.

The industries of this most paradisaic country are as varied as the opportunities offered by nature. But there remains a vast amount of work to be done. The country has not been developed. For ages it slept under a government that gave no encouragement to industry and capital. The progressive government of the last decade has given a mighty impetus to the development of the resources, but only a beginning has been made.

If we can but call the attention of the world to its opportunities there should be an influx of foreign capital that would speedily develop the treasures of soil and mine deposited there by nature.

Next to the banks of the Nile and the classic soil of Greece and Rome, there is no more fascinating study to the archaeologist than that of the great empires on the ruins of which the Republic of Mexico was built. Many of the relics and ruins from the times of the Aztecs and their predecessors will be brought to the fair. Prof. Putnam, chief of the Department of Archaeology, will reproduce the most celebrated ruin, the temple of Mitla in the State of Oaxaca.

These ruins of Mitla are of unknown antiquity. Burgoa, writing of them in 1674 describes them practically as they appear to-day and says of them that they are "very old and beyond the memory of the living," a Spanish phrase equivalent to "beyond the memory of man."

There is but little doubt but that this building was a sacred religious edifice like those of Memphis in Egypt, and that it was used for the solemn interment rites not alone of chiefs, but also of the braves who died in battle. The ancient name yet surviving, "Ly-o-baa," which means center of rest, confirms what little remains of legend regarding the use of the buildings—legends, because history there is none.

An interesting bit of history will be reproduced in the palace of Chepultepec, known as the Palace of the President. On this site and on the summit of a lofty rock rising abruptly from the level plain about it, was situated the palace of Montezuma. The conquering Spaniards razed it to the ground, and Cortez built another structure in its place. During the war between the United States

and Mexico this castle was destroyed and in its place was reared the present government building and mansion. As far as the conditions of the level ground will permit this edifice will be duplicated at the Exposition.

President Porfirio Diaz is enthusiastic on the proposed plan of Mexico's exhibit, as is evinced by his proclamations to the different departments. A man occupying a position of such prominence in the commercial world can and will make his power felt among the nations to be represented at the World's Columbian Exposition.

CALIFORNIA.

California, although a member of the Union only since 1850, reaches back to the earliest history of the new world. It was visited by the early Spanish adventurers under Mendoza, Grijalva and Cabillo. The distinguished buccaneer, Sir Francis Drake, entered its harbors while he was circumnavigating the globe; it was substantially captured by Gen. John C. Fremont and the famous Kit Carson; and in 1848 it was formally ceded to the United States.

The gold excitement of 1849 has become familiar to every one, but it may not be known that during the first five years the out-put of gold was \$1,195,000,000. 1856 occurred the formation of the famous Vigilance Committee which put an end to the reign of terror due to the capture of all the legal and legislative machinery by active politicians from the slums. In 1858 was established the Overland Mail, which was succeeded two years later by the Pony Express; these enterprises were merely a fore-

shadowing of the intelligent enterprise which has always distinguished the Pacific Slope. The Chinese outnumber the population of other foreigners, and their customs and wares will play no unimportant part in California's exhibit. In 1883 occurred the decline in mining stocks which reduced their valuation 94 per cent., entailing a loss of \$265,000,000. In 1886 occurred the Land Boom in Southern California, which left many in possession of town lots where yet there is no town.

California, as is well-known, possesses stupendous forests, great mountain peaks, wonderful canyons, the 36,000 acres included in the famous Yosemite Valley, dizzying falls, such as The Bridal Veil, and the Merced River Cascade; strange formations, such as the Half Dome, Sentinel Rock, The Royal Arches, and The Spires; inland waters, such as Goose Lake, Lake Tahoe and Tulare Lake; the broad expanse of San Francisco Bay, and the celebrated Golden Gate. Its deep-sea fisheries employ 3,000 persons and yield a revenue of \$1,000,000; its waters furnish the greatest variety of the most palatable fish; it collects \$70,000,000 for its crops, cereals, roots, and hay; its gigantic vegetables, its chicory and mustard, its hops, its vineyards, and its orchards, find in all of us beneficiaries. Its industries include the beet-sugar, which has rendered Claus Spreckles famous; canned goods, stock-yards, in comparison with which others seem small, and silk; it stands first among wool-producing States; its gold mines have not ceased to yield rich returns; and it has these wonders for the traveler known as The Petrified Forests, the Colorado and Mohare Deserts, Alabaster and Daser Caves, and the Natural Bridges of Coyote Creek, and Hay Fork. It has so far produced \$26,000,000 of silver, \$70,000,000 of quick-

silver, and has resources of onyx, lime, copper, lead, iron, slate, marble, salt, soda, borax, basalt, sulphur, soapstone, serpentine, manganese, tin, tufa, porphyry, antimony, petroleum. dolemite, sandstone, arragonite, graphite, koaline, alabaster, granite, mineral-paint, iridium, slatinum, bismuth, isinglass, tellurium, asbestos, alum, and cobalt. It is rich in mineral springs and in attractive resorts for the traveler and the invalid; and its forestry is not limited to one locality, for Stanislaus and Calauras Grove are quite as well worth seeing as the point generally sought by the visitor who wishes an acquaintance with the big trees of California. But California has more than all this, for it possesses a population sufficiently intelligent to recognize the truth that natural resources must be supplemented by educated intelligence. Hence, she supports great universities and a well-conducted system of elementary and secondary schools. She has given to the country at large such writers as Bret Harte, Derby, and Joaquin Miller; and she has drawn into her service some of the ablest educators and specialists of the United States. The question, then, is less what has California to show? than how complete will she undertake to make her exhibit.

California will have among its exhibits a reproduction of Californian topography, in the form of an elliptical panorama. Visitors will be transported around the ellipse by an elevated railway, and it will thus be possible to pass in imagination through California's varied and celebrated scenery and to look upon the various industries of this favored State. Of course the big trees of California must be represented at Chicago, otherwise than by photographic reproduction; so from Tulare County will come a monarch of the forest, three thousand years old, ninety-

nine feet in circumference at the base, and one hundred and seventy-two feet in length from the ground to the lowest limb.

In the matter of existing collections, California has resources in the State Mining Bureau Museum, the University State Geological Survey, the Vry Collection, the Hank's Collection and the Keene Collection.

The Californian never does things by halves, as the country has learned when occasion has invited his participation. She has much to show in the matter of irrigation, the cultivation of silk, ramie, beet-sugar, mining processes, wine processes, harvesting, ship-building, fish-hatcheries, saw-mills, inventions, the raising of horses and sheep, in resources of onyx and marble, and in a flora well calculated to enter into competition with that of the tropics.

Commissioner M. H. DeYoung, though born in St. Louis, removed to San Francisco when but five years of age. He began at the bottom of the ladder as a newsboy and is now the owner and editor of the *Chronicle*, of which he was the founder.

WASHINGTON.

Washington, although but recently admitted to the sisterhood of States, carries her history back to the era of the early Spanish adventurers. Seattle has become known to all through the aggressive energies of its citizens who have created opportunities for acquainting the country with the great and varied resources of the state of their adoption, and who have supplemented their

natural resources by all the auxiliaries to human growth which the civilized world has discerned. But the relative deadness of printed description will be overcome for the great exhibit which this State is preparing for the World's Columbian Exposition. There seems a special propriety in introducing, at this point, a tribute to Columbia.

THE NATIONS PAY TRIBUTE TO COLUMBIA.

Columbia, star-crowned ruler of the West,
Before whose mighty standard nations bow,
Niagara greets thee; from her foamy crest
In ringing tones are thundered down below:

Free as the waters of this stream, thou art;
Free as that noble bird thy ensign bears;
Free as the wind that tend thy thees apart;
Free as the oceans lashing 'gainst thy shores.

Yet, O my country, refuge of my youth,
What wondrous quiet in thy valleys reigns;
And on thy hills dwell happiness and truth,
And in thy beauteous hamlets love remains.

So true wert thou, O land of Faith, of Hope,
That foreign children longed to call thee "mine."
Longed for thy rule so merciful, yet just,
And found a refuge kneeling at thy shrine.

Thou wert not strange to those who came to thee,
A mirror wert thou, from whose magic face
Were seen reflected in clear imagery,
Home scenes, time nor eternity could efface.

What is it England sees? She sees but thee—
Thou art her daughter and she clasps thy hand
Weeping to lose, yet glad to see thee free,
Thou'lt aye remind her sons of their loved land.

The crystal-castled Hudson comes in view;
With admiration Germany stands mute—
"The Lorelei" sound through the fading blue,
Played by some shepherd on his magic flute.

Lo! Switzerland her stately march begins,
Stands smiling, trembling on the western side;
Here on another Alps, God's sunlight shines—
Here silvered mountain streamlets softly glide.

From o'er the waters, sailing up the bay,
France comes and halts; for there in regal form
Stands "Liberty." He wins eternal day
Who pays his tribute to her matchless charm.

Green-bannered cornfields in the sunlight glow
And velvet grasses clothe the low hillside.
"Home," murmurs Erin's son, "I see thee now."
How swells his faithful heart with loyal pride.

All these pay tribute to thee, wondrous land—
The Orient, the Occident now greets.
Faith, Hope and Love are proud to grasp thy hand,
And at thy shrine, all men as brothers meet.

—[CLARA F. JONES.

MISSOURI.

Missouri has grown without the adventitious aid of booms, and while never lacking in productive energy has never yielded to the enterprise which trusts for its returns to options and margins. Its cities enter into no competition with New York and Chicago, in the matter of "sky-scraping buildings," but prefer substantial convenience to empty ostentation: they do not claim to be the "hub" of intellect or of trade, but at the same time they have produced minds as noticeable as those of Thomas H. Benton, Dr. George Englemann, Dr. James Shiel, Ira Divoll, Dr. Wm. T. Harris, brewing, tobacco manufacture, etc., the supremacy of St. Louis is unquestioned.

During the civil war, Missouri was one of the legal border States, and she had a large opportunity of learning that "virtue is its own reward." Missouri, like Ohio, is a State favored exceptionally by nature, and the story of her growth vindicates her proper use of her rich legacy. One who does not understand that she does not believe in developing resources faster than they can be used, will fail altogether to understand her intelligent and healthful industry, because it differs from the insane activity of the British sportsmen who wantonly killed off the innumerable herds of buffalo, because the buffalo

were there to be killed. Missouri has everything to exhibit, but what she shows will depend partly upon the wisdom of her Commissioners, and partly upon the fact that she has no desire to invite an irruption of impecunious Goths and Vandals, although extending the most hospitable of welcomes to all immigrants, foreign or domestic who choose to cast in their lot with her.

Colonel C. H. Jones, one of the World's Columbian Exposition's Commissioners from Missouri, is Chairman of the Finance Committee of that body, and is a loan made by Georgia and Florida to Missouri. Under his management the *St. Louis Republic* has made a perceptible advance in the direction of metropolitan journalism. Col. Jones adds strength to Missouri's commission, and as he always makes his influence felt, this fact should contribute largely to the success of Missouri's exhibit. His system and astuteness have been recognized in the conduct of the great daily of which he is editor, and these qualities must prove invaluable in organizing the forces of the State. In manner Col. Jones is always accessible, and, although one of the busiest of men, always finds time to say a kind word to those who need it, and to listen to well-intended suggestions.

CONNECTICUT.

Connecticut, one of the original thirteen States of the Republic has been less aggressive than some of the older New England States, but she has been none the less persistent and forceful. Her history at any period is full of interest for those who take any interest in the foundation

and development of the New World ideas, as represented by the United States.

To the traveler and pleasure-seeker, Connecticut is full of interest, and as Paris has an American colony, so Bridgeport and other towns have a large resident population of those whose real homes are elsewhere. Hartford is one of the great money centres of the country; New Haven and Hartford are both possessed of famous colleges; her manufactures are extensive, and although, as in the case of Colt's arms, conducted upon a large scale, are as a rule typical of an American idea that universal industry and thrift is of greater permanent benefit than the possession of a limited number of business "barons" of the largest establishments in the world. The natural highways by water have been supplemented by a network of railways, so that inter-communication is rendered perfect. As has been said, there is no period of American history which can be illustrated without mention of Connecticut, but limit of space induce us to select as a specially American type, Nathan Hale, the Martyr Spy of the American Revolution, whose story has been so adequately told by Isaac Hinton Brown,—himself a patriot of the same school:

NATHAN HALE, THE MARTYR SPY.

After the disastrous defeat of the Americans on Long Island, Washington desired information respecting the British position and movements. Capt. Nathan Hale, but twenty-one years old, volunteered to procure the information. He was taken and hanged as a spy the day after his capture, September 22, 1776. His patriotic devotion, and brutal treatment received at the hands of his captors, have suggested the following:

'Twas in the year that gave the Nation birth—
A time when men esteemed the common good
As greater weal than private gain. A battle fierce
And obstinate had laid a thousand patriots low,
And filled the people's hearts with gloom.

Pursued like hunted deer,
 The crippled army fled; and, yet, amid
 Disaster and defeat, the Nation's chosen chief
 Resolved his losses to retrieve. But not
 With armies disciplined and trained by years
 Of martial service, could he, this Fabian chief,
 Now hope to check the hosts of Howe's victorious legions—
 These had he not.

In stratagem the shrewder general
 Ofttimes o'ercomes his strong antagonist.
 To Washington a knowledge of the plans,
 Position, strength of England's force
 Must compensate for lack of numbers.

He casts about for one who'd take his life
 In hand. Lo! he stands before the chief. In face,
 A boy—in form, a man on whom the eye could rest
 Insearh of God's perfected handiwork.
 In culture, grace, speech, reflecting all
 A mother's love could lavish on an only son.

The chieftain's keen, discerning eye
 Appraised the youth at his full worth, and saw
 In him those blending qualities that make
 The hero and the sage. He fain would save
 For nobler deeds a man whose presence marked
 A spirt born to lead.

"Young man," he said with kindly air,
 "Your country and commander feel grateful that
 Such talents are offered in this darkening hour.
 Have you in reaching this resolve, considered well
 Your fitness, courage, strength—the act, the risk,
 You undertake? Have you, in that fine balance, which
 Detects an atom on either beam, weighed well
 Your chances of escape 'gainst certain fate
 Should capture follow in the British camp?"

In tones of fitting modesty that well
 Became his years, the patriot answered thus:
 "My country's honor, safety, life, it ever was
 My highest purpose to defend: that country's fces .
 Exultant sweep through ruined land and home
 And field. A thousand stricken hearts bewail
 The loss of those who late our standard bore
 Appeal to us through weeping eyes whose tears
 We cannot brush away with words. The ranks
 Of those now cold in death are not replaced
 By living men. The hour demands a duty rare—
 Perhaps a sacrifice. If God and training in
 The schools have given me capacities
 This duty to perform, the danger of the enterprise
 Should not deter me from the act
 Whose issue makes our country free. In times
 Like these a Nation's life sometimes upon
 A single life depends. If mine be deemed
 A fitting sacrifice, God grant a quick
 Deliverance."

"Enough, go then, at once." the great Commander said. "May Heaven's guardian angels give You safe return. Adieu."

Disguised with care, the hopeful captain crossed
The bay, and moved through British camp
Without discovery by troops or refugees.
The enemy's full strength, in men, in stores,
Munitions, guns,—all military accoutrements
Were noted with exact precision; while
With graphic sketch, each trench and parapet,
Casemated battery, magazine and every point
Strategic, was drawn with artist's skill.

The task complete, the spy with heart
Elate, now sought an exit though the lines.
Well might he feel a soldier's pride. An hour hence
A waiting steed would bear him to his friends.
His plans he'd lay before his honored chief;
His single hand might turn the tide of war,
His country yet be free.

"Halt! a British musket leveled at
His head dimmed all the visions of his soul.
A dash—an aimless shot; the spy bore down
Upon the picket with a blow that else
Had freed him from his clutch, but for a score
Of troopers stationed near. In vain the struggle fierce
And desperate—in vain demands to be released.
A tory relative, for safety quartered in
The British camp, would prove his truckling loyalty
With kinsman's blood. A word—a look—
A motion of the head, and he who'd dared
So much in freedom's name was free no more.

O, Judas, self-condemned! thou art
But the type of many trait'rous friend,
Who ere and since thy time, betrayed to death
A noble heart. Henceforth be doubly doomed—
A base example to earth's weaker souls.

Before Lord Howe the captive youth
Was led. "Base dog!" the haughty general said,
"Ignoble son of loyal sires! you've played the spy
Quite well I ween. The cunning skill wherewith
You wrought these plans and charts might well adorn
An honest man; but in a rebel's hands they're vile
And mischievous. If aught may palliate
A traitor's act, attempted in his sovereign's camp,
I bid you speak ere I pronounce your sentence."

With tone and mein that hushed
The buzzing noise of idle lackers in the hall,
The patriot thus replied: "You know my name—
My rank;—my treach'rous kinsman made
My purpose plain. I've nothing further of myself
To tell beyond the charge of traitor to deny.

The brand of spy I do accept without reproach;
 But never since I've known the base ingratitude
 Of king to loyal subjects of his realm
 Has British rule been aught to me than barbarous
 Despotism which God and man abhor, and none
 But dastards fear to overthrow.

For tryant royalty your lordship represents
 I never breathed a loyal breath; and he
 Who calls me traitor seeks a pretext for a crime
 His trembling soul might well condemn."

"I'll hear no more such prating cant,"
 Said Howe, "your crime's enough to hang a dozen men.
 Before to-morrow's sun goes down you'll swing
 'Twixt earth and heaven, that your countrymen
 May know a British camp is dangerous ground
 For prowling spies. Away!"

In loathsome cell, deprived
 Of holy sacrament, and e'en the word of Him
 Who cheered the thief upon the cross,—refused
 The means wherewith he would indite his last
 Farewell to her who gave him life,
 And to another whose young heart
 The morrow's work would shade in gloom,
 He passed the night in charge of one whom Satan had
 Commissioned hell's sharpest torments to inflict.

Securely bound upon a cart, amid
 A speechless crowd, he stands beneath a strong
 Projecting limb, to which a rope with noose attached,
 Portends a tragic scene. He casts his eyes
 Upon the surging multitude. Clearly now
 His tones ring out as victors shout in triumph:

"Men, I do not die in vain,
 My humble death upon this tree will light anew
 The Torch of Liberty. A hundred hands to one
 Before will strike for country, home and God,
 And fill our ranks with men of faith in His
 Eternal plan to make this people free.
 A million prayers go up this day to free
 The land from blighting curse of tyrant's rule.
 Oppression's wrongs have reached Jehovah's throne:
 The God of vengeance smites the foe! This land,—
 This glorious land,—is free—is free!"

"My friends, farewell! In dying thus
 I feel but one regret; it is the one poor life
 I have to give in Freedom's cause."

VIRGINIA.

Virginia, the “mother of Presidents,” was happily selected for a spot which should unite varied scenery, ample and widely differing resources, and such conditions of life as should develop a race of men whose influence should be felt for good wherever the accidents of life should cause them to pitch their tents. The famous Blue Ridge mountains, the celebrated Spas, spots like Harper’s Ferry made ever memorable by our military history,—these and things like these, render Virginia an object of intense interest to the traveler. Iron and cotton manufactures have become considerable in amount although the predominant interest continues to be agricultural. Tobacco was the one interest in the time of Captain John Smith, and tobacco continues to be the dominant interest of the farmer. Virginia, although by no means different, has been less successful than Massachusetts in keeping herself before the public eye, and yet her part in the history of our country has been no less important. The best product of Virginia, however, has been her men and women, so as a type we select Stonewall Jackson :

THE DEATH OF STONEWALL JACKSON.

With hush of death surrounding him, the dying chieftain lay—
From smoke and din of battle-field now gently borne away.
Earth’s Sabbath day was ending, and the City of the Blest
Had opened wide its portals bright to welcome him to rest.
The shadow of that lonely vale whose darkness is untold
Was lying thick about his heart—its damps how chilling cold!
But the citadel of thought, no foe, however fierce, could take,
Save that foe at whose dread approach the sleeper does not wake—
E’en now it trembles ’neath his touch, as, earth’s lights growing dim
Commingle with the lights of heaven, now breaking over him.

Awhile then voices muttered loud, "Up, 'tis the call of war!"—
He heard them vaguely, as one hears strange voices from afar—
Then—shifting scene—he is at home—and with a rapture wild,
Again he hears the welcome tones of loving wife and child.
A dear familiar scene seems now just shimmering in the air,—
'Tis soldiers kneeling all around, while he gives voice to prayer.
The spirit of the warrior brave was strong within him still,
But the current of his life had drowned the pulses of his will,
And all his strength was impotence—save that his soul grew strong,
Knowing that prayer was rising from the assembled sabred throng
That God would bless their leader—and he knew their prayer was heard
(For He will ever bless His own—according to His word.)
The songs of triumph echo still through memory's tottering hall,
While the pain of being conquered will outlast the pain of all.
Advancing and retreating, like a force before the foe,—
Urging to action—then to rest—the voices come and go.
He listens with a warrior's ear to heed a warrior's call,
But, voices calling him to rest seem sweetest now, of all—
A vision of a rest from strife where sounds of war should cease
Seemed mirrored in the misty air, and seemed to give him peace.
The call, "To arms!" no more could rouse the dying chieftain's eye—
It pierced its dull environment—his spirit longed to fly.
His answer to the messengers was borne on evening breeze—
"Now, let us pass the river o'er, and rest beneath the trees."
O'er Lethe's stream the boatman pale, plying his silent oar
Has rowed the fallen chieftain safe to the Elysian shore.
The river crossed, at last is gained the promised, longed-for rest,
Under the shade of life's fair tree, in the City of the Blest.

—[HARRIET ADAMS SAWYER.

PERSIA.

Persia holds a leading place in our earliest authentic history, and almost without interruption has she continued to interest the nations of the world. Every school-boy who attempts Greek reads of Cyrus the Great and his marvelous military career; of Cambyses, of Xerxes, whose name is inseparably joined to that of Thermopylæ, of the overthrow of the empire by Alexander the Great;

of renewed Persian domination in the sixth century ; of its being overrun by the Mohammedans. Its worship was so far in advance of other pagan religions as to have made familiar even to the popular reader the names Ohriman and Ormuz. The terrible Genghis Kahn, who, however, according to Marco Polo, has been greatly defamed, conquered Persia in the thirteenth century. Less than two hundred years afterwards Tamerlane, celebrated by English poets, desolated the country, and in the fifteenth century he was succeeded by the dynasty of the Shahs. Nadir Shah has a place among the great military men of the world, and it was he that pillaged India of wealth estimated at nearly two hundred millions of dollars. Doubtless the wonderful collection of jewels possessed by the Persian Shahs had its real beginning under Nadir Shah. The poet, Moore, popularized much of Persia's scenery and many of her customs.

Who has not heard of the vale of Cashmere,
With its roses the brightest that earth ever gave,
Its temples, and grottoes, and fountains as clear,
As the love-lighted eyes that hang over their wave?

Oh, to see it at sunset, when warm over the lake
Its splendor at parting the summer eve throws,
Like a bride full of blushes, when lingering to take
A last look at her mirror at night ere she goes.

When the shrines through the foliage are gleaming half-shown,
And each hallows the hour by some rites of its own.
Here the music of prayer from a minaret swells,
Here the Magian his urn full of perfume is swinging,
And here, at the altar, a zone of sweet bells
Round the waist of some fair Indian dancer is ringing.

Or to see it by moonlight,—when mellowly shines
The light o'er its palaces, gardens and shrines;
When the waterfalls gleam like a quick fall of stars,
And the nightingale's hymn from the Isle of Chenares
Is broken by laughs and light echoes of feet
From the cool shining walks where the young people meet.

Turquoise, iron, antimony, lead, copper, and antimony are mined; rock-salt, naphtha, sulphur and mumea abound; marble and coal have also been discovered.

The date-tree flourishes, and there are luxuriant forests of cedar, cypress, box, beech, elm, oak, walnut; on the slopes of the mountains there is rich pasturage and there are fruitful crops of barley, wheat, and sugar-cane. The vine, the pomegranate, and the vine; orchards of figs, apples, peaches, plums, pears, and cherries are everywhere common; while the lower portions of the country produce rice, sugar-cane, indigo, tobacco, and cotton. Sheep and goats are the chief interest of the rancher, but the wild ass, in his primeval state of beauty and fleetness, is still to be found.

Persian silks and velvets, carpets, rugs, woolen goods, shawls, swords and daggers, are known to all through their value as an element of commerce. The Persian empire is still great in extent and in resources; its land is fertile; its people have in the past proved their ability; and yet inefficient government renders all of these natural advantages of but small moment in giving Persia the rank which at various times she has held in the world's history.

